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Historic Furnishings Report

Ship BALCLUTHA

San Francisco Maritime National Historical Park

Draft by Ted Miles 1994 and updates

INTRODUCTION

The steel ship BALCLUTHA is a museum artifact of great size and complexity. She was built to carry cargos across many thousands of miles of ocean, usually rounding Cape Horn, on each outward passage. The ship was home to the crew for months at a time. They were each given quarters in order of rank from the ordinary seaman to the skilled petty officers like the Carpenter and Sailmaker through the two or three Mates and above all the Master.

Since the ship was originally restored in 1955, some of the living quarters have been available to the visitors. From the beginning Karl Kortum, the man in charge of the project, was aware of the significance of these parts of the BALCLUTHA. He wrote:

"Only a tiny percentage of the public is interested in naval architecture per say; the bulk of our visitors will be looking around the decks and in the quarters for the human angle -- how did the men live, eat and labor in a ship worked all by hand. so that is what we will have to supply, that is the theme of the work that remains to be done, and only if it is done well will the PACIFIC QUEEN [BALCLUTHA] hit the Bay Area with anything like the impact we expect on and after opening day."

Restoration of the Pacific Queen
Report No. 31, April 7, 1955

The masts and rigging of the ship have gotten a lot of care over the years so this report will not spend very much time documenting that area, although some missing deck elements such as the running lights, ventilators and cargo winches will be discussed. These fittings will add important details to the overall feel of the ship.

One of the real treasures aboard is the 1880s panelling and woodwork in the Officers quarters, additional furnishings in the poop will be a highlight this project. Replicated woodwork in the cabins will be important to introduce the Mates to the visiting public and better show how the Master lived.

Ted Miles July 15, 1999

The Forecastle

The crews quarters aboard this vessel are in the traditional location used aboard hundreds of ships built in the 19th century. The space right at the forward end of the main deck, wet and drafty though it was, was an improvement over placing the crews living space below decks. Later ships had a larger deck house and the last of the Cape Horners, mostly German four masted barks, had the crews housed in a mid ship house in the center of the vessel.

When purchased by the museum, the space was found to be much altered from its original form and function. During the Alaska Packers years the space was used for a galley for the Chinese cannery hands. Evidence of this shows in the period photos of the foc's'le head, where a large chimney comes through the deck on the port side. This was for the Mexican galley. The stove went to the junk yard during the 1955 restoration. The port side had the Chinese galley, and still aboard, is a large cooking pot reputedly from this operation. There seems to have been a brick fire box which supported the pots. One of them has been displayed

Each ship is a major museum object, deserving of the finest possible setting and interpretation -- and the ships exist for the visitors to the museum.

Historic Furnishings

Furnishings exhibits are integral parts of ship interpretation. Crews' and captains' quarters provide visitors with explanations of the work force and shipboard living conditions. Galleys and charthouses illustrate the mechanics of passage. Cargo holds offer full size, three dimensional explanations of purpose.

Many areas of the ships are furnished, some with built-in and freestanding pieces original to the vessels. Other pieces have been added over the years, some based on firm documentation, some not. Interpretively, the effectiveness of these exhibits is varied. Certain exhibits adequately interpret aspects of ship life. Other aspects remain largely undeveloped. Many visitor barriers are inadequate, forming unnecessary intrusions on the historic scene, while others should be redesigned or removed to provide fuller visitor access.

An historic furnishings report is required for each ship, documenting all interior spaces throughout the ship's period of activity. The report will identify spaces for refurnishing based on interpretive significance, visitor circulation, and available documentation. Each historic furnishings report will incorporate furnishings plans outlining exhibit needs for the affected spaces. The plans will include all exhibit elements bearing on these spaces, include visitor barriers, lighting, and explanatory material.

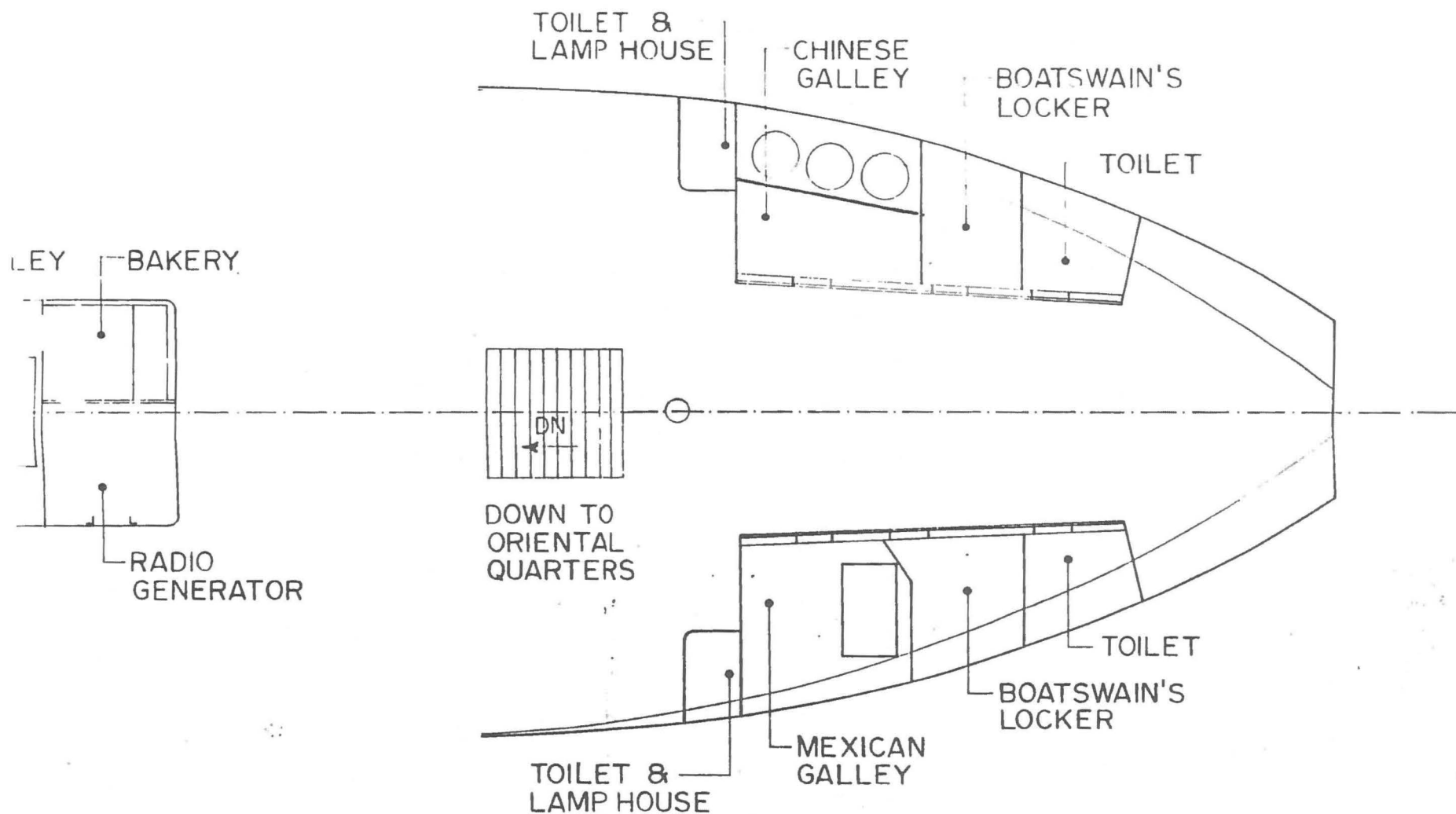
Intang Prospectus

in the t'ween deck for many years. A storeage space for Bosun's stores existed along the port and starboard sides. And the windlass with a chain drive added was in the center of the room. The chain drive and connecting hardware were removed during the 1955 restoration.

There is one photo that shows the cut off bulkhead and some of the fir tongue and groove in the space. (P92.056.5n by Karl Kortum and J9.28,511n by Gordon Grant show the area with the center part of the wall missing. Apparantly, one of the early projects of the 1955 restoration was to replace the missing steel work. There is a brief mention of doing the steel work in the weekly reports. The two door frames match the 1955 deck house wood work and had Douglas fir doors in the openings. For the 1992 restoration new teak doors were built and installed. Two more teak doors have since been built for the head and Bosun's locker, these were put in place in 1994 and 1995. The four door frames themselves still need to be upgraded to match the original door frames in the deck house.

Repairs to the steel door frame of the head were carried out in 1992 and similar work was done on the opposite side in 1993. A replica door was hung in the head with another ready to hang in the Bosun's locker on the opposite side. Consideration should be given to placing some shelves in the port side space which is refered to as a Bosun's locker in the Captain Pierce letters.

Moving back to the foc's'le interior, a set of twenty bunks were built in 1955 and installed by the Stan Flowers carpenters.



'SE

MAIN DECK FORWARD

The area was screened off from the public and a couple of interpretive panels were placed in the space. Some furnishings were used in the space, but were later removed because they were not in a secure location and were being water damaged.

In 1990, with the increased number of Environmental Living Programs being held on the Hyde Street Pier, a new set of upper and lower bunk beds were installed and the wire screen removed. This time there are twenty-two of them, as per an early Alaska Packers sketch of the area. These are occasionally used by the children and are solidly built. When installed they were varnished, this is not correct for a crew space and at some point they should be painted. Two major elements missing from the space are a pair of tables for the crew to eat off and lounge around. The Connell lumber list calls for yellow pine and pitch pine to be used in the construction of the port table. An early Alaska Packers sketch shows tables on either side of the windlass, so presumably there was a table on the starboard side as well as the port side. In his 1954 Specifications Karl Kortum wanted to install two tables as in the ship ALCINOUS with a pair of 4" x 4" legs and wedges to hold the tables in place.

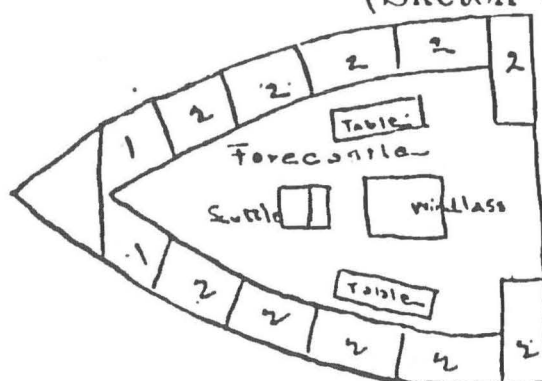
Other elements needed in the crews quarters are period lighting fixtures and at least some sea chests. There could have been as many as twenty-two crowded into the space. The Specifications call for three lamps in the space. It is likely that two of them hung over the tables, perhaps the other near the lockers and clothes hooks.

PASSENGER BERTH AND (Exclusive of C

1st Cabin... 8 berths 2nd Cabin

22 berths in forecastle. Chinese 1

(Sketch of arrangements of B



Toilets, number, Cabin... 2

Chinese 1

Bath-Tubs 1

Describe Galleys for Whites, Italians and Chinese

Crewn galley 7 x 12 fitted with ran

floor,.... Chinese galley, portable

Although not documented common practice aboard these ships would call for some kind of storage lockers and a place to hang oil skin foul weather clothing. The space on the aft bulkhead is likely to have been where these items were located.

The sky light for the space has been reconstructed at least three times, sometimes in conjunction with deck work in the area. Starting with ~~D~~ Douglas fir and most recently with teak, the materials and craftsmanship have been improved each time. The current one is from about 1990 and should last for many years.

The interior in this space is currently fitted with four illustrated display panels that tell the story of the men who lived there very well. While upgrading the furnishings, space should continue to be allocated for these or similar panels. There are two large display panels next to the windlass which continue to tell the story of the space.

It is worth noting that the deck in the space is original 1886 material. So when repairs are made, it should be done with the utmost care and planned to disturb as little of the neighboring planking as possible. Recent repairs with concrete are not going to last long, as well as not being historically correct.

The next dry dock period for the ship is set for 1998 and water way repairs both to the steel and cement will likely give up a chance to work in this area.

In the Connell Ledger the timber list calls for the following items to be built in the Foc's'le:

Room	Use	Timber
Forecastle	Tables	Y Pine
Forecastle	Skylight	Teak
Forecastle	Stanchions	Teak
Forecastle	Ladders	Teak
Forecastle	Door grounds	Y Pine
Forecastle	Door cheeks	Teak
Forecastle	Beds	W Pine
?	Lamp boards	P Pine
Forecastle	Beds	Y Pine
Forecastle	Posts	Y Pine
Forecastle	Bed ends	Y Pine
Forecastle	Mooring pipe plugs	P Pine
Forecastle	Figurehead back	Greenheart
Forecastle	Rails	Teak
Forecastle	Seats	Y Pine
Forecastle	Table posts	Y Pine
Forecastle	Bed stocks	Y Pine
Forecastle	WC	Y Pine

I have recently had correspondence with Clarke, Chapman and Company who built the anchor windlass. They were glad to get a drawing of the installation. They report that it is the oldest example of their craftsmanship that still exists. The capstan on the deck above needs a replacement bronze cover plate.

Balclutha Maindeck

This report has covered the raised or covered areas of the main deck and will now discuss the open parts of the main deck, in other words, the spaces between the raised areas at the bow and the stern, excluding the interior of the deckhouse.

Always keeping in mind, the fact that the ship is being restored back to the British period, the area is a fairly straight forward part of the ship to restore, if the present extended poop is left as is. For more specific information about the original poop, see the Appendix, Shortening the Poop, at the end of this report.

Ventilators

Starting at the bow there were a series of ventilators built into the ship to provide fresh air for the cargo spaces below the main deck. Once again I turn to the Specifications as a starting point. They say, Ventilators-- Two trunks to be arranged on deck plan and approved by owners and to be fitted with dog kennel sky-

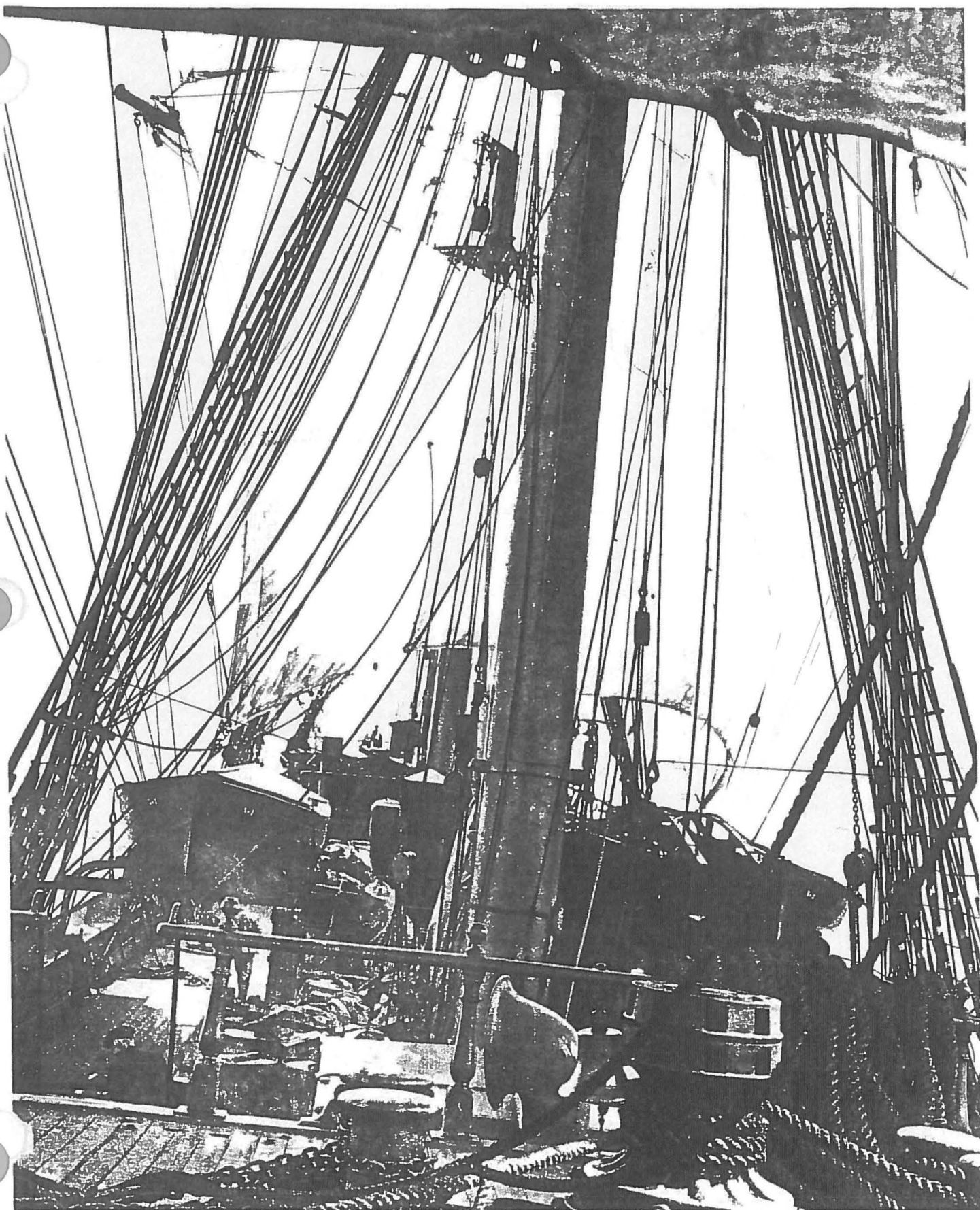
lights or any cover approved by owners. Two bell mouthed ventilators forward, One bell mouthed ventilator for the fore peak of approved size fitted with cast iron galv_d coverings and covers or as according to Board of Trade rules."

There were two trunk type vents built into the hull, the first of these was restored during the recent work (1992) on the deck house. It is a steel structure with a teak cover and bronze fittings.

The second trunk was a few feet aft of the main mast on the center line of the hull, in an area that is now covered by the extended poop deck. It was sometimes called the "lime juice hatch" because it was a convenient place for the Steward to hand out the weekly ration of citrus juice required on all ocean going ships registered in Great Britain. The Alaska packers removed the structure in order to make more room in the fisherman's living quarters. There is a patch in the main deck which covers the remnants of the vertical sides of the hatch. There is one photo that we have that shows the structure, though unfortunately the top has a canvas cover in place so it is impossible to see the details of how the top was made.

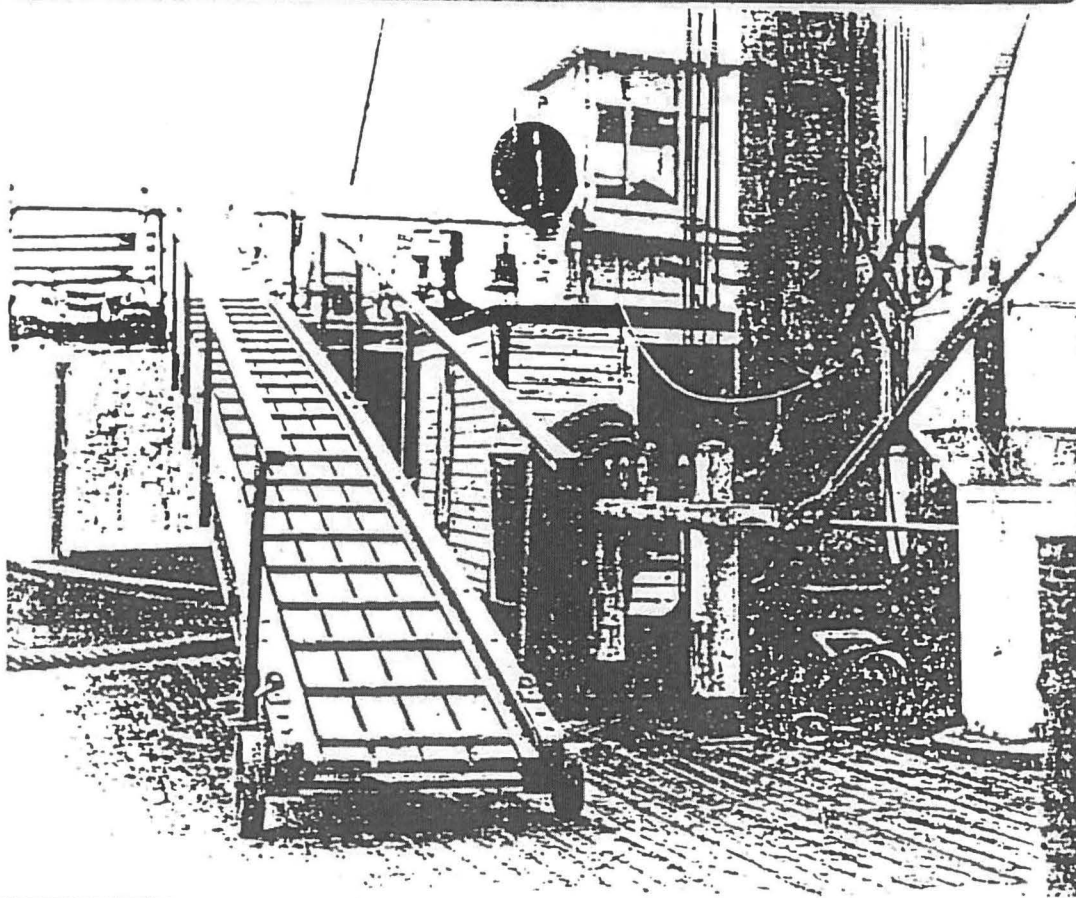
The second type of vent used was the conventional riveted steel "bell mouthed" vent used in several places on the deck. They had a teak margin set around the base where it fitted through the deck. The first one was apparently located inside the foc's'le, placed to get air into the fore peak, the area of the hull ahead

of the collision bulk head. The exact location was easy to determine. It is possible to see the site by looking at the the main deck in the crew's quarters. The patch is visable just aft of the forward bulkhead in the foc's'le. It is described in a letter from Connell to A. Brownlie & Co. as, " 1 mushroom type ventilator 8" dia. 2' above deck with tween deck pipe - 7'9" between decks." The next ventilator was placed on the break of the forecastle, almost hiding the bell which hangs from the forecastle railing. The original vent was in place until at least 1925 when Gordon Grant took a picture of it, (J9.28,521n). Sometime during the next five years, it was replaced with a similar vent which remained on the ship well into the museum period. In his 1954 Specifications, Karl Kortum wanted to " Wirebrush and paint, "Redwood", both ventilators on fore deck, Supply cowl ventilator to replace the patent ventilator abaft the main mast." The main deck was replaced about 1966 and the tall vent was never replaced after that time. Today it is located on the first floor of Building E with SAFR # 9827. This vent stands about seven feet high, it is described in the Connell letters as "1 16" ventilator, cowl head with watertight cover 7' 3" from top of deck to top of ventilator" It would be a simple job to re-install this vent in the current deck. But compared to the vents in the early photos it is rather crudely made and lacks the wide lip that shows in the other early photos of the ship. All the others could be fabricated, but at considerable cost in time and money.



Star of Alaska
Photo by Gordon Grant
J9.28,52In

(8-10-85)



Note vent, Booby hatch with sliding door,
large vent with Liverpool type head



The next vent was located just aft of the fore mast and placed so that it went up through the main stays. There is an Alaska Packers period photo that shows a round or "patent" head vent in the same location. The original is in the same Connell letter as, "1 14" same, 7' 4" from top of deck to the underside of the lip." Currently the mount contains a nice cowl vent from the Sacramento River steamer T C Walker. It is the one mentioned in the 1954 specification quoted above. It is a close match to the old photos except that it is too short.

Next there is an oval vent in the same place inside the mizzen stays. Rather than being round, it is oval and described as " 1 cowl head to fit oval coamings 15 1/4" x 21", top of cowl 6'9" above deck." Currently the fitting does not have a vent and is covered with a hard wood top. Kortum was aware of the missing element, where he says, "Supply cowl ventilator to replace patent ventilator abaft mainmast. In the end they supplied the hard wood top mentioned above.

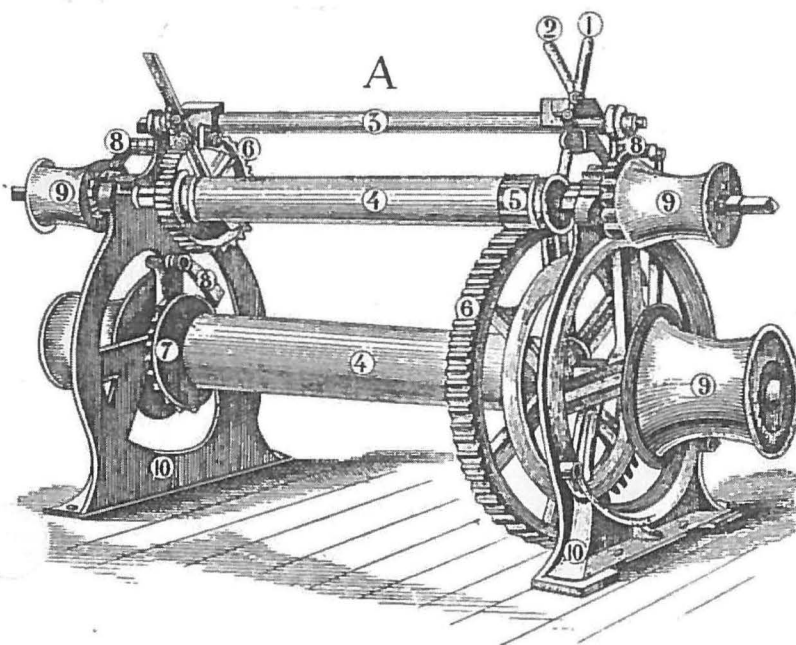
Winches

One of the most interesting things that is missing from the Balclutha and most of the other surviving Cape Horn square riggers are the cargo winches. The Specifications describe them as, "Winches-- One double purchase winch at fore hatch and triple purchase winch at main hatch all to be fitted down on teak soles with iron plate riveted to the beams and fastened with strong



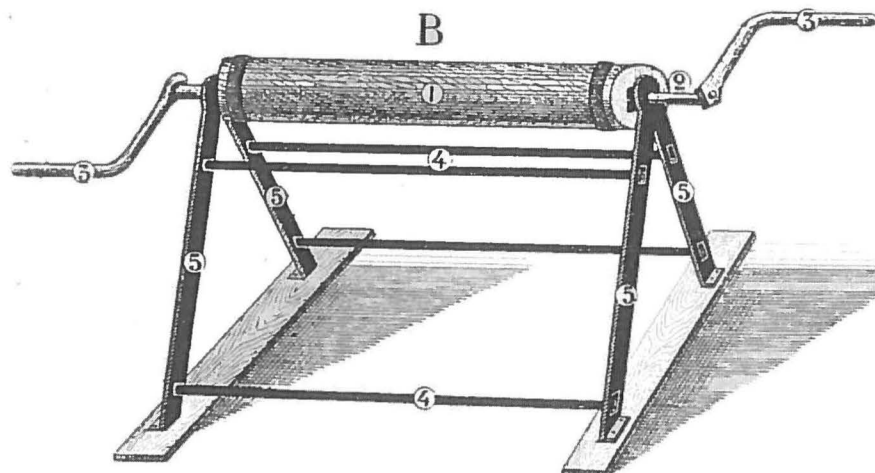
Winches.

A. Winch.



- 1 Clutch-lever.
- 2 Brake.
- 3 Tie-rod.
- 4 Barrels.
- 5 Pinion.
- 6 Spur-wheels (*).
- 7 Ratchet-wheel.
- 8 Pawls; Palls.
- 9 Warping-ends.
- 10 Framing of winch.

B. Crab-winch.



- 1 Barrel.
- 2 Barrel-shaft.
- 3 Handles; Winch-handles.
- 4 Tie-rods.
- 5 Standards of winch; Framing of winch.

(*) i.e. : Wheels in which the teeth are perpendicular to the axis of the shaft with which they are connected.



screw bolts and nuts through chocks which are to be not less than 10" wide and 5" thick. One portable single powered winch fitted with barrel of large diameter."

Here is an interesting opportunity to do a detailed study on just exactly they had here. Unfortunately the Connell letters do not mention what company made the machinery. However they were simply known as "patent winches" there were many foundries that made such equipment. An early example from the Cutty Sark is shown

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here and a woodcut for a late 19th century model is shown in the Paasch maritime dictionary. I have discussed these machines with a designer I know who reports that they could be put together using some castings and some weldments in such a way as to be indistinguishable from the 19th century originals. In approaching this kind of reproduction, I think it important that the winches be made operable, so that they can be used to work on the spars and rigging and also possibly on loading and unloading demonstrations through the fore and main hatches.

There are two small bits of physical evidence remaining on the ship. On the fore mast fife rail there is a steel pin and a hole for the winch handle to go through when it is in the stored position. It is safe to assume that the handles were the same size as the ones on the pumps and the second set of handles on the main mast fife rail were for the main hatch winch.

DECK BITTS

The Specifications are once again going to tell us some interesting facts about these important deck structures. They say, " Bitts-- Four mooring bitts on main deck with heavy soles same thickness as main deck and let down on tops of stringer plate an screwed to same. Two strong pair of bitts on poop deck and two on forecastle-head. Main deck bitts and all other to rest on teak chocks with heavy pitch pine chock underneath. Two pair of bitts on forecastle-head for shank-painters. Four galv_d iron bitts on main rail for making fast fore and main sheets and for fore and main braces if wished..."

After over one hundred years of use all this hardware is still in place around the decks. It is missing the heavy pitch pine soles and the teak chocks that were originally fitted around the bitts. The one on the port side of the poop is most likely a replacement because the first time the ship was at the Hyde Street Pier in 1940 a Navy ship went past at speed and the wake pulled the mooring bitts right out of the deck. The Navy later made repairs at its own expense.

Poop Deck

The raised area at the stern is mostly intact as built, the usual details need to be addressed. The teak sheet block on the port side is missing, the original or a replica of it is in storage in the riggers shop aboard the ship. It needs to be put back in its proper location. *(Installed in 2000)*

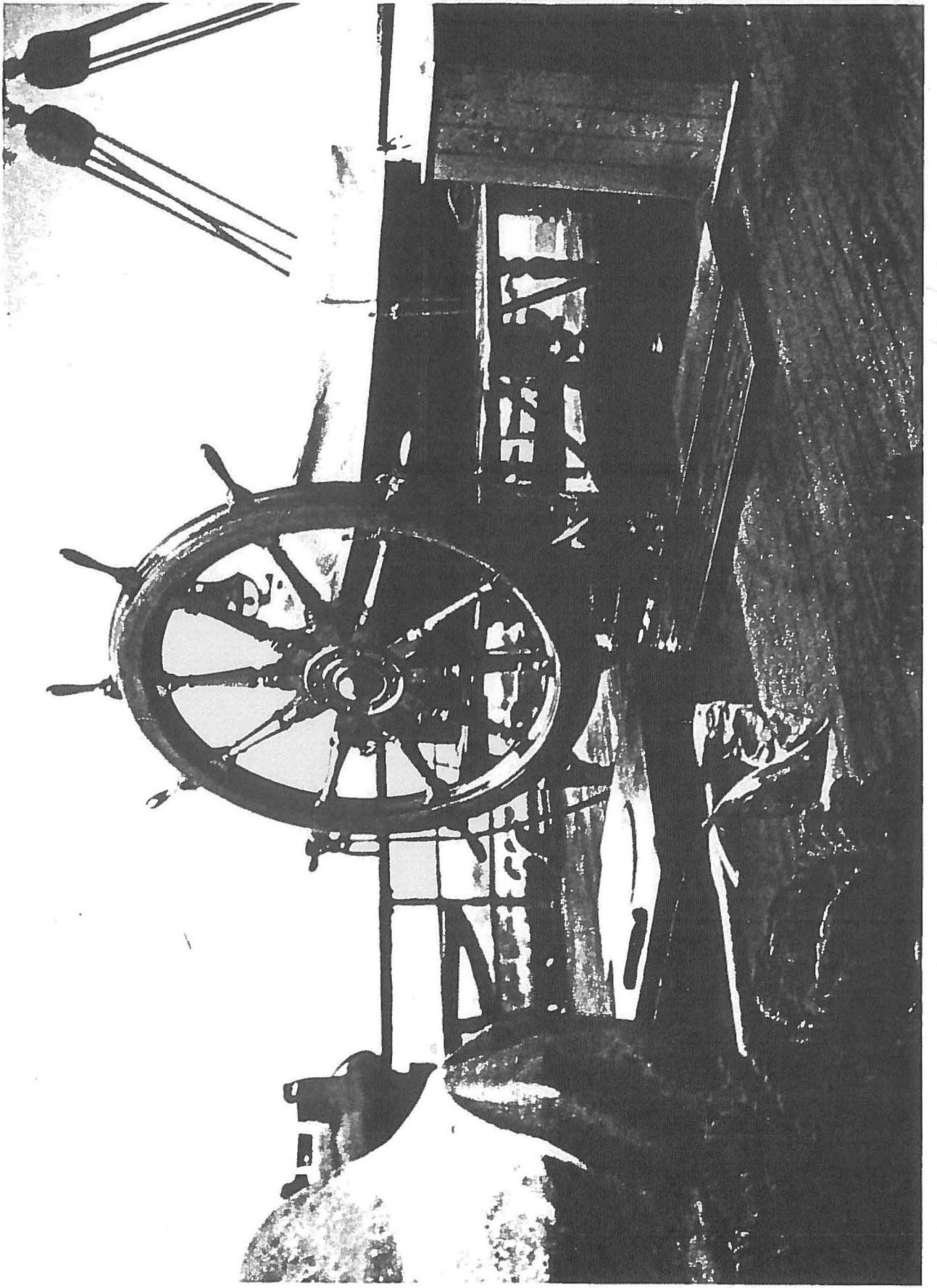
The original steering compass binnacle, or one that has been aboard for a long time is displayed aboard near the wheel. It is missing its cover which should be replaced. Another bronze item is the watch bell that used to be fitted on top of the wheel box. It shows quite clearly in a picture taken in 1925 by Dr M.P. Kaufman, (P80-004.4n), on one of the many voyages to Alaska.

The standard compass, originally placed on a platform on the aft pair of boat skids, was later carried at about the same location on the extended poop deck. It was displayed for a time, then put in storage, then put on display again.

Another element that was on the poop was a grating that stood in front the steering wheel. It filled the space between the deck hatch and the feet of the steering box. The structure served to raise the level of the man at the steering wheel, making it easier for him to steer the ship. The grating appears in Alaska Packers period photos and later and it appears to have had an additional step added to the structure at some point. Maybe the Packers had short sailors?

The chart house stands on the poop and is connected with the





Steam of Alaska 1929 William M. M. Collection



living quarters below. The interior space is covered along with the interior of the Poop. it is worth noting that there was a wood cove molding placed below the roof half round moulding. As seen on the foc's'le head, the deck house and the chart house, it served to finish off the roof line and hide the row of rivets that run along the top of the houses.

April 15, 1997

BALCLUTHA'S DECKHOUSE
Repairs, Restoration and Furnishings

Introduction -- Structural Repairs

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Introduction -- Structural Repairs

The money to do an overhaul of the Balclutha's deck house was available in 1992. The project was designed to meet three objectives:

1. Using research tools such as the Connell letterbook and the Specifications, it was decided to return the deck house to the original layout, bearing in mind that the structure will always show the wear and tear of more than a century of changes.

2. Renew the deck (roof) adding a margin plank, and allowing space for two new larger skylights. The new deck will stop the incessant leaks and make it possible to furnish the interior of the house as it was during the ship's British period.

3. Renew the angle and margin plate around the aft end of the house. Finish the removal of a door frame from the Alaska Packer's period and re-install several missing steel elements.

The first part of the work carried out was the removal of the museum built woodwork from 1955 and sandblasting the interior of the house. The deteriorated angle and margin plates were removed and new steel fitted back in place. The use of hot rivets in these repairs was the first time this organization has used this old time craft. The heads of about 120 rivets were custom shaped to match the originals in the angle at the top of the house. About 400 more were driven in the air shaft and assorted repairs to the shell of the house.

A new air shaft to ventilate the t'ween deck cargo spaces was installed just forward of the galley. A missing angle from the forward door on the port side was installed using the original rivet holes in the shell plate. Angle plates and original holes were used to rivet a new sill plate on the forward side of the galley.

The forward wall of the deck house which seems to be unaltered was used as a model for replacing missing steel at the aft end of the house. Two of these angles formed the frame of the bulkhead between the carpenter's shop and his sleeping cabin. Two more angles support a similar bulkhead from the air shaft to the forward end of the house.

Once the steel work was finished and painted the new deck could be installed. The Specification and the existing bolt holes in the house call for five inch planks, so the new wood was milled to this larger size. The skylight openings were enlarged and the teak structures were installed by the museum's shipwrights. The door frames were rebuilt, following the pattern of an original as a sample. Three of the original teak doors were restored and seven new ones built on the same pattern. Four of these were used on the forecastle, one on the chart house and six on the deck house.

Other wood work included the replacement of a deck plank under the forward starboard door and installing margin planks around the new air shaft. The fore and aft bulkhead in the pantry was used as a model for three new sections of tongue and groove

bulkhead installed in the house. They are laid out as in the sketch plan drawn by Captain D.P.Campbell who served as an apprentice in the Balclutha's sister ship the Sirenia. The wood work was carried out in a highly skilled manner by Mario Silivero of Donco Industries. Wood work on the interior will be continued by the in-house staff, with the eventual aim of fitting out the interior as drawn by Captain Campbell.

Several smaller but significant repairs were carried out. A deck beam that had been crudely repaired was re-welded and ground to match the other beams in the area. A pair of interior drain spouts were installed, these were copied from an old photo. A standard fitting aboard Cape Horner's, these lead pipes catch rain water from the deck house roof so it can be used for washing and cleaning. A three inch diameter half-round molding mentioned in the Connell papers was restored. It is an elegant way to separate the steel from the wood parts of the deck house.

The heavy construction phase of the project wound up with two coats of primer and two coats of color for the interior and the exterior of the deck house. A project which began as a much needed way of repairing a leaking and rotten structure ended up as a considerable up-grading of a significant part of the ship's living and working spaces.

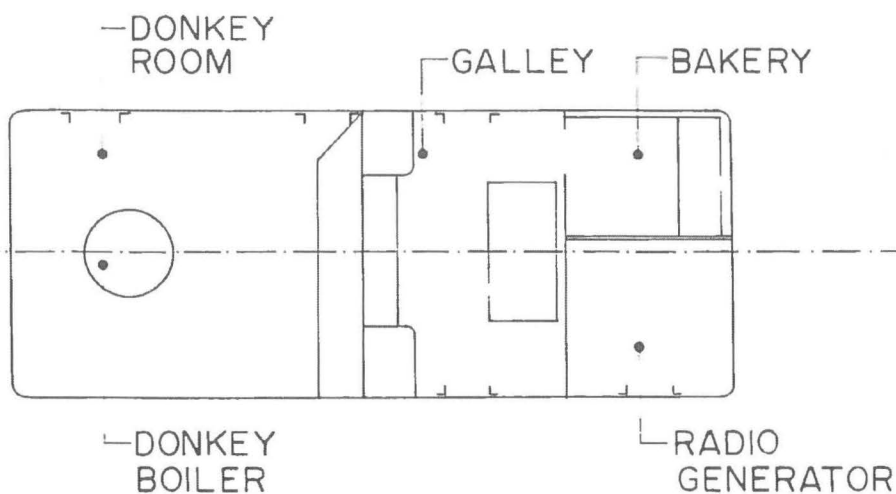
Part I no I A Look Back

What we have in the Balclutha is a very old ship, she has had three active careers under commercial ownership as well as many years of use as a museum. The deck house has seen many changes over the years, changes that suited the needs of the time which were changed again in their turn.

When the ship became the property of the museum, the shell of the house showed the structure as it had been used by the Alaska Packers Association. A scale drawing from their file shows the basic outline of the structure including doors, bulkheads and the steam donkey engine. Along with the removal of a massive amount of junk this is the point where the museum started to make changes to the structure. It would have been nice to document more of the work, but the people involved did as much as they could at the time.

M. Mexican Alaska Packers 1922

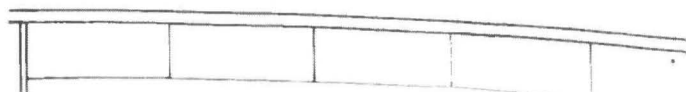
Part I no 2



MIDSHIP HOUSE

Alaska Packers 1922
as redrawn by HABS/HAPER

M





Part 1. No 3

The 1954/55 Restoration

The PACIFIC QUEEN ex BALCLUTHA was purchased by this museum in May 1954. The clean up and restoration of the ship began at once. The program was in full swing once the ship had been drydocked in July and the hull was found to be in acceptable condition for the museum to complete ~~the~~ purchase option.

The documentation for the period is both written and photographic. Captain T C Conwell and later, Karl Kortum wrote weekly reports on the year long restoration program. The photographic part consists of about 250 black and white views taken by Karl Kortum with his Hasselblad camera. The 2 1/4 inch negatives are very sharp and well suited for this kind of documentary work.

There are three photos in the series that are especially valuable because they are taken inside the house. They show a scene of general debris, rotten wood, peeling paint and rusty machinery. See attached photos. The only remaining partition runs across the house at the foreard end of the Donkey room. It was used to attach a number of electrical boxes from the ship's first electric system. A doorway appears to have been broken throught it to give access to the forward part of the house.

The deck house was cleaned out to the bare walls, except for the Murrey Brothers Donkey engine which was removed later. One of the photos shows the right side center door as found with a crude bar across to prevent entry. The door frame and the door

appear to be original as to size and location. They were used as patterns during the 1991/2 restoration of the space. In 1955 studs were welded around the door frame opening and plain 2" by 4" wood frames were installed. Douglas fir doors similar to the originals but simpler in style and finish were installed. They were to remain in place until 1992.

The steel sides of the house were repaired and patched where necessary. The door to the generator room installed by the Alaska Packers was plated over and the double doors on the Donkey engine room were plated over, but the door frame was not removed until 1991. A steel bulkhead was installed at the aft end of the original galley in the historically correct position.

The wood deck on the top of the house was repaired and the round opening left over from the donkey boiler was closed in. A tank was removed and a rotten skylight over the galley was replaced using Douglas fir. Some repairs were also made to the deck in the engine room.

In the Spring of 1955 after the house had been sandblasted and painted the interior was rebuilt with a wood bulkhead at the forward end of the galley. A wall about four feet forward of that and a partition wall dividing the forward end of the house in two were also installed. One of the rooms had a pair of bunks installed and the other one was fitted out as a watchman's space. A function that it would continue to serve until the ship was moved to the Hyde Street Pier in 1988. Shortly before the ship was opened to the public the carpenters from Stan Flower's shop

installed two cabinets and a bench in the Galley, as was typical of British practice for the time, in this kind of ship. During the 1991/2 restoration the space was again rebuilt using better and stronger designs for the cabinets and brass hardware which holds it all together. Some use of the former engine room was made by displaying a couple of sea chests along with an interpretive panel describing the Apprentice system for future officers. After 1984 the space was turned into a work shop to be used during an extended shipyard period which took place that summer and fall.

Part II

The deck house was still unfinished when the Donco Marine craftsman finished their part of the work. As is so often the case in restoration projects of this kind it is the details that make all the difference. When the San Francisco Maritime shipwrights moved onto the job, they went to work on restoring the three original doors that had been stored on the ship since the 1955 restoration work. Following their pattern exactly, they and three new replica doors were repaired, refinished and installed in the door frames of the house.

A new and larger skylight was built for the galley and following a similar design new sky lights were built and installed on top of the air shaft and across the forward living spaces of the house. These areas of varnshed teak look elegant

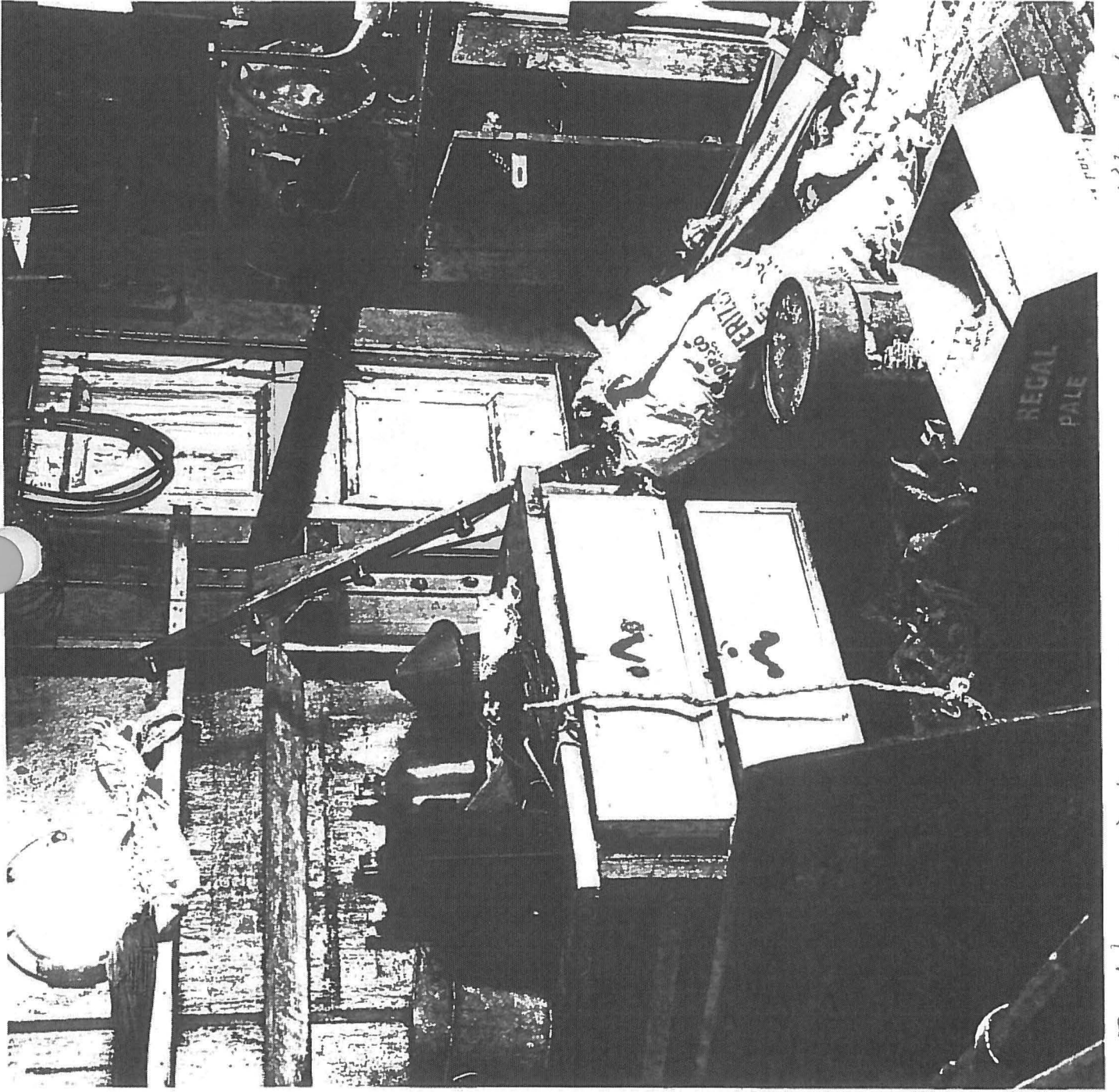
and freely

reflect the Victorian times in which the ship was built and operated.

The Campbell plan which we have been following calls for the room at the forward end of the house to port to be used by the craftsman: the cook, the bosun and the sailmaker. Their room was not much more ornate than the crew's foc's'le. These men did have some things better, notably being able to sleep eight hours at a time. The plan calls for two sets of bunks that overlap at the forward corner of the house. The Campbell plan also shows a set of lockers in front of the air shaft and for a water tank to be placed next to it. Another source of information for the spaces are the Connell letters, which call for a table in each room. A practical place to put one is on the wall that runs down the center line opposite the bunks. Due to the small amount of floor space in the living quarters in the forward part of the house it would make sense to make the tables fold against the wall when they are not in use. This spacesaver is often found aboard ships.

The other item sketched by Captain Campbell are a pair of water tanks for the two cabins. We can use the tank that is in the galley as a sample or build something smaller for the cabins. The tanks would seem to be of tin plate construction rather than a steel plate job. Some indication of rivet heads on the tank is most desirable.

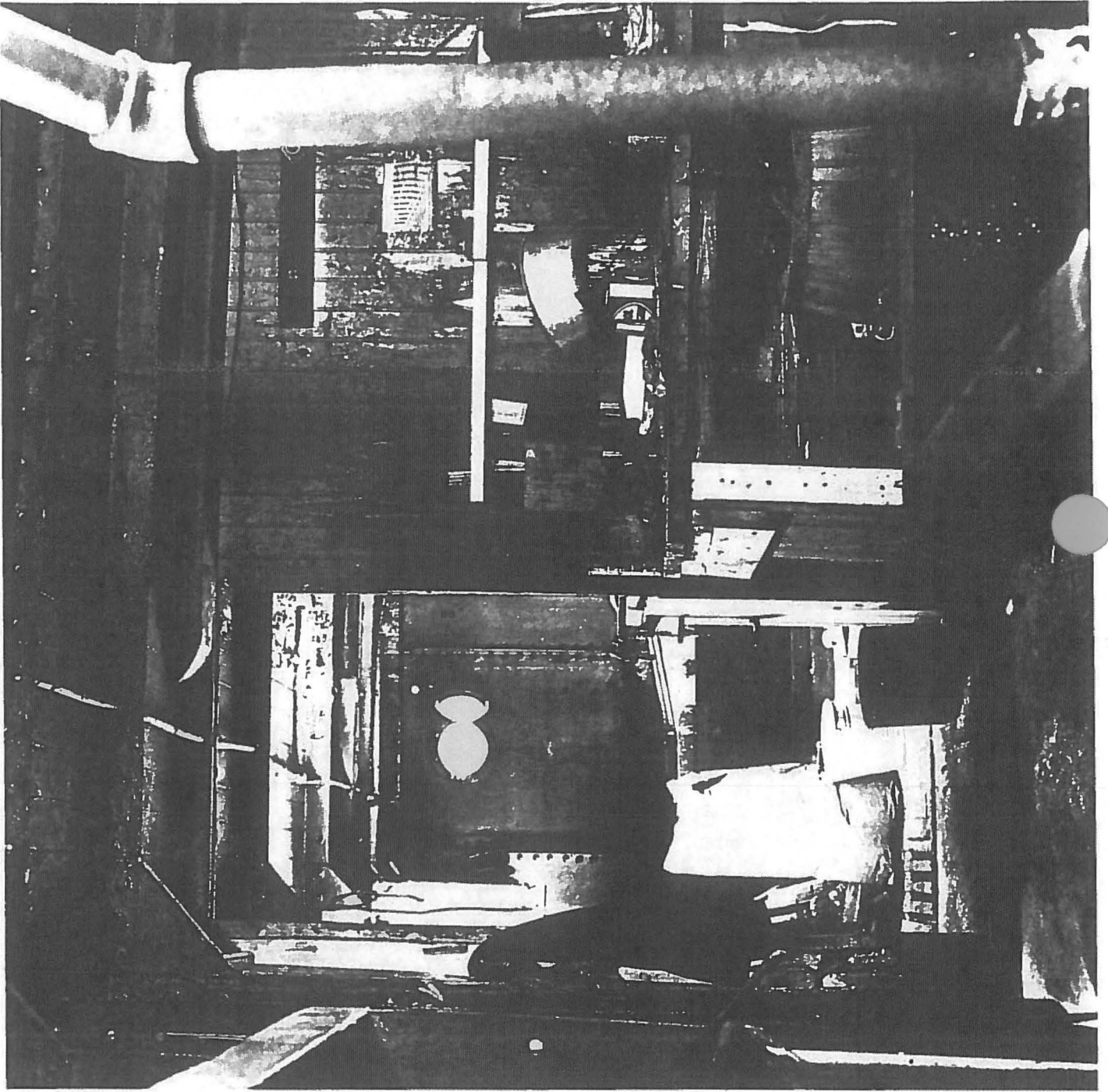
The bunks in each of the cabins need a mattress, making a total of nine in the house. These are a simple canvas bag that historically would have had straw as a filler. Wishing to avoid insects, an alternate filling is necessary. But something that



KK photo

Deckhouse Interior, May 1954

KK photo



Part II no 1

MEMORANDUM

8/1/91

To: Bill Thomas

For Review: Karl Kortum, Steve Hyman, Ted Miles, Michael Bell,
Michael Harrington

From: Stephen Canright

NOTES ON THE CONFIGURATION OF BALCLUTHA'S DECKHOUSE INTERIOR

1. Intent of This Memorandum:

In order to arrive at the most accurate possible configuration for the BALCLUTHA's deckhouse interior, I would like to try to summarize all of the evidence on this point, and to suggest some conclusions. This document can then be circulated for review and comment prior to any final decisions being made.

2. References in Charles Connell & Co. Documentation

The documentation copied or transcribed by Norman Brouwer at the Strathclyde Archives include the Connell letter book from the period of BALCLUTHA's building and the account book for BALCLUTHA. Relevant references include the following:

From the Letter Book: A letter from Connell to Robert McMillan dated Dec. 20, 1886 (following the launch of the vessel) lists tonnages of various spaces and specifics of crew spaces. Two spaces are listed in the deckhouse, a Boys Deckhouse, certified to accommodate 6 seamen and a petty officers deckhouse, certified to accommodate 6th seamen.

Unquestionably, therefore, the deckhouse included separate spaces for Boys (Apprentices) and for petty officers. Petty officers might include a bosun, a sailmaker, a carpenter, and a cook. Separate accommodations are listed for the steward in the poop. The certification for six does not necessarily imply that six bunks would be provided, but only that the cubic footage would theoretically allow six occupants. We note that the poop space allocated to the First Officer was certified for three, but would certainly have only had one bunk. The space for the Second and Third Officers was also certified for three. We can infer, however, that the spaces allocated to Boys and petty officers were of equal size.

From the Account Book, Timber List: The timber account lists all wood put into the vessel by size, species, intended use, price, and cost. References bearing on the deckhouse interior are as follows:

-Boys House: Skylight

-Galley: Skylight, Galley Top, Galley Dresser, Galley Seats.

-Carpenter's Shop: Carpenter's Bench.

References to fittings not assigned to specific areas include:

- Bulkheads (white pine)
- Deckhouse Hatch (yellow pine)
- Deckhouse table
- Deckhouse Table Brackets
- Bed parts, various (all pine)
- Deckhouse lockers (yellow pine)
- Deckhouse doors (teak)

From this material we can make several inferences:

-Two additional spaces, a galley and a carpenter's shop were unquestionably included in the house.

-Two skylights were provided, for the galley and the boys house.

-At least some interior bulkheads were of wood.

-Tables and lockers were provided in unspecified spaces.

-Teak doors were certainly exterior type. No interior doors are listed.

-A hatch, of unspecified position or function, was provided.

3. Information from the Alaska Packers' "Description of the STAR OF ALASKA"

This document, from the files of the Alaska Packers, gives a detailed description of the vessel and her outfit. The document is undated, but under "General Condition of Vessel" on page 5 the entry reads, "In good condition April 1910." Certainly the vessel is described as she was prior to the extension of the poop in 1911. It is highly probable that the basic document dates from 1910. Notes on repairs made in later years, yearly to 1930, are attached to the original printed document.

Information bearing on the house interior is as follows:

-A sketch plan on page 2 shows the arrangement of the house top only. From forward to aft there is a boat skid, a fore-and-aft skylight, a rectangular ventilator cowl, a thwartship skylight, a boat skid, an unidentified rectangle (probably a fresh water tank,) the circular donkey boiler, and an unidentified rectangle (probably a hatch for the donkeyman to see aloft.)

-Under "Galleys" on page 3, the crew galley is described as being 7' x 12', with range by W.S. Ray Mfg. Co., with tiled floor.

-Under "Water tanks" on page 4, an iron stationary tank is noted on the forward house, with a capacity of 240 gallons.

-Under "Donkey Boiler" on page 4, a Murray Bros. engine and boiler are described, and noted as having been installed on May 2, 1899.

-Under "Ventilators" on page 6, an airshaft is noted on the forward house, 2' x 3', leading to the main hold.

-The entry for 1911-1912, detailing the poop extension, also notes, "The forward house and the space under the forecastle head was rearranged for a donkey room, ship's galley, Italian galley, and Chinese galley with two lockers and two toilets." (Note that the sequence of items listed here is probably aft to forward.)

-The entry for 1914-1915 notes, "Furnished new deck on forward house."

The major problem with this material is distinguishing between the vessel's layout in 1910 and her layout as launched in 1886. It is clear that the layout of the after portion of the house was altered in 1899 with the installation of the donkey boiler and engine. It is quite probable, however, that the forward portion of the house had not been substantially altered to that point. Certainly the Alaska Packers made no notable alterations between the time they acquired the vessel in 1905 and 1911 when they installed an Italian galley. Any such work would have been noted in the 1910 document. Between 1899 and 1905, when the vessel was owned by J.J. Moore and Pope and Talbot, she continued essentially as a deepwater carrier, her original function. Crewing requirements, in terms of galley and petty officer spaces, would have remain basically unchanged. She would not, of course, have carried apprentices. It is tempting to conclude that with the exception of the donkey space, her British configuration would have been largely retained.

The 2' x 3' ventilator mentioned here was almost undoubtedly original equipment. There would have been no reason to install this fitting during the 1899-1905 lumber ship period, and it would have been noted by the Packers if they had added it.

The dimensions given for the galley, 7' x 12', imply that the galley ran from side to side, athwartship the house, with 7 feet of fore and aft space.

The renewal of the weather deck of the house in 1914-1915 means that no trace of the pre-Packers configuration can be gained from the current deckhead.

4. Photographic Evidence, Portrait, ca. 1888, #B6.40,500

This photo shows the port side of the vessel, at anchor off San Francisco. She is port painted, as per her current scheme. The deckhouse is painted a light color overall, with darker butt doublers. Doors and portholes stand out clearly. The boat on the skids obscures the forward end of the house top.

The arrangement of doors and portholes conforms to the current arrangement, with two doors closely spaced approximately at the center and one door well aft.

5. Physical Evidence Remaining Aboard

The basic perimeter of the house is intact, at least as high as the wash strake around the bottom of the house. The upper plating has been altered for the double doors on the after face, installed in 1899, and a door forward on the starboard side, put in apparently in 1911-12, when the Alaska Packers installed the Italian galley. Both of these openings have now been filled in with welded plate. The riveted angle iron framing surrounding the donkey room doors remains in place.

The beams of the weather deck are intact, except for one beam in the area of the old donkey engine which had been cut through and was crudely repaired during the 1955 restoration. The planking of this deck is apparently that which was put on by the Packers in 1914-1915.

The deck inside the house is apparently largely original. There is no record of any major renewals. There is an area of repair in the after compartment, apparently made in 1955 following the removal of the donkey boiler. This is apparently planking, probably about 1 inch, laid down flush over the original 4 inch planking.

The major unquestionable evidence of the original internal configuration, lies in the riveted angle bars running athwartships across the deck, apparently defining the forward and after bulkheads of the galley. At the forward end of the after compartment, this bulkhead is defined by a thwartship margin plank which remains in place. A section of the margin plank on the starboard side has been cut away for piping, revealing a section of vertical plate riveted to the angle bar. This plate was cut off at deck level, apparently by the Packers. The rivets securing this angle bar are visible from the underside of the main deck. The style of riveting, including size, spacing, and finish, is identical to the rivets of the perimeter of the house. Also visible under the deck are the rivets securing a second bulkhead angle bar, the rivets again identical to those of the perimeter. The second line of rivets is seven feet forward of the first. The current after bulkhead is welded steel, apparently installed in 1955, while the forward bulkhead is wood, again put in in 1955.

From this evidence we may make several inferences with confidence. First, the only reason for angle bar in this location would be for the installation of steel plate bulkheads. It is reasonable to conclude that these bulkheads enclosed the galley, for the purpose of containing any fire that might start from the galley range. Secondly, the spacing of these bulkheads corresponds to the size of the galley as given in the Alaska Packers "Description" of 1910. Assuming, as seems apparent, that the bulkheads are original, this supports the idea that the configuration of the forward portion of the house was largely unchanged in 1910.

A second major piece of evidence is an opening through the interior deck just forward of the forward galley bulkhead. This opening, approximately 40 inches wide by 28 inches fore and aft, corresponds to the size of the air shaft listed in the 1910 description, and to the location noted on the sketch in that document. This opening is now decked over. The 1914-15 deckhead was not pierced for an opening here.

From this opening we can infer first the location of the air shaft, and secondly that this shaft was removed by the Packers, presumably during the 1911 reconfiguration. Lastly this position for the shaft is an additional confirmation of the forward bulkhead of the galley, as it would only make sense to place such a shaft against a bulkhead, rather than intruding into the middle of a space.

The remaining physical evidence in the house is more questionable. Forward of the galley bulkhead there is a line of nail holes corresponding to a midship bulkhead. There was unquestionably a bulkhead here at some point, but this may have been a Packer period fitting. Certainly the pattern of paint on the 1914-15 deckhead shows evidence of a bulkhead, indicating that there was a full bulkhead here during that period. Whether or not there was an earlier bulkhead cannot be determined. In the after compartment, there is some evidence of a bulkhead approximately on the centerline, running fore and aft. In this area, portions of the decking have been replaced at the forward end, making a definitive determination of this bulkhead impossible.

6. Personal Recollections, Captain Norman Pearce

Captain Pearce, as a young man of 20, served as an A.B. for the BALCLUTHA's maiden voyage in 1886. In 1954, he responded to an inquiry in Sea Breezes Magazine for recollections of the ship. In the course of several letters and a visit from Captain Robinson in 1954, he described his recollections of BALCLUTHA's layout.

Essentially, Pearce recalled that the house was divided into four compartments. (See attached drawing.) A fore-and-aft bulkhead

ran through the centerline of the house, unbroken from forward to after bulkhead. A thwartship bulkhead ran across the house somewhat aft of the midpoint of the house. The galley was on the port side forward, with a single door opening to port. On the starboard side forward was a sleeping compartment for the cook and carpenter. The apprentices were in the port side after compartment. The starboard side after compartment, intended as quarters for the bosun and sailmaker, was used to store sails and various other items and contained a carpenter's bench. Access to the after compartments was through two doors located on the after face of the house.

Captain Pearce's recollections are extremely dubious. From physical and photographic evidence, we know that he is in error on the position of the doors into the after compartments, and in showing only one door on each fore-and-aft face of the house. His positioning of the galley is also wrong, based on the evidence of the two thwartship bulkheads remaining in the ship. In no particular does his recollection match what we find aboard the ship or in contemporary photographs. It may be that in looking back over 68 years, Captain Pearce was confusing one ship with another. We certainly cannot doubt the sincerity of his intentions, but his recollections are clearly flawed to an unusable extent.

7. Personal Recollections, Captain D. P. Campbell

Captain Campbell sailed as an apprentice in 1886 in BALCLUTHA's sister ship SIRENIA, and served in her until she was lost on the Isle of Wright in 1888. He also responded to the call for information on BALCLUTHA in 1954, writing to the Museum and enclosing diagrams of both the house and the forecastle arrangements of SIRENIA. His diagrams were neatly executed and he notes in his letter that "...my recollections.... are very clear.."

Campbell recalls that the house interior was divided into five spaces. (See attached drawing.) The galley ran from side to side, just aft of amidships. The area forward was divided by a fore-and-aft-centerline bulkhead, with quarters for apprentices on the starboard side and quarters for Bosun, Cook, and sailmaker on the port side. He shows a locker in the position we know to have been occupied by the air shaft in BALCLUTHA. The after area was divided by a fore-and-aft bulkhead to starboard of the centerline, with the starboard compartment being a sleeping cabin for the carpenter and the port compartment the carpenter's shop. The door openings correspond to the current, apparently correct, arrangement now aboard the BALCLUTHA. He shows, however, that the galley doors were of iron, in two sections, dutch door fashion.

The first question in assessing the value of this information is to look at how close the SIRENIA was apt to have been to the BALCLUTHA. SIRENIA was launched by Charles Connell, for Robert

McMillan, in December of 1885, one year before BALCLUTHA. With the same builder and the same owner, she falls within the accepted definition of sister ship. The Connell correspondence transcribed by Brouwer describes BALCLUTHA as "...a duplicate of the SIRENIA." in a letter to McMillan of April 26, and again in a letter to Lloyds dated May 27, describes BALCLUTHA as "practically a duplicate of the SIRENIA..." In the absence of full specifications for either vessel, we cannot state with certainty that the house arrangement for BALCLUTHA was in fact a duplicate of the SIRENIA, but logic would indicate that this was most likely the case. The vessels were intended for the same trade, and would have been manned by the same crew. SIRENIA's arrangement presumably represented the best thinking of Connell and McMillan on an appropriate arrangement for a vessel of this type, within a budget acceptable to the owner. There was not time for any practical experience of the SIRENIA to have altered this thinking before BALCLUTHA's design was finalized, in May of 1886. There is no reason to think that the specifications would have been altered.

A second test would be to see to what extent Campbell's recollections match what we know to have been true about the configuration of the house. The galley is shown in the position indicated by the physical evidence of the bulkheads. The position of the doors is consistent with what remains in the ship and with what can be determined from the photograph. The size of the spaces for apprentices and petty officers is equal, as was indicated by the Connell letters, and the centerline bulkhead forward is consistent with the existing nail holes. The structures Campbell shows as lockers, forward of the galley bulkhead, are in the position we know to have been occupied by an air shaft. It is perhaps notable that Campbell remembers a structure just there. There might well have been shallow lockers attached to the forward face of an air shaft. We have no evidence one way or the other to confirm his layout of the spaces aft of the galley.

Lastly, we might make a judgement of the quality of Campbell's recollections based on the style and clarity of his presentation. Certainly, his letter and drawings do not seem to be the work of a man whose mental abilities are in any way diminished by age. His writing is brief and to the point. His drawing is good. He states that his memory is clear. He is most definite about the points he would have known best. As an apprentice he would have been quite familiar with the deck house, but might never have set foot in the forecastle.

8. Conclusions and Recommendations

A. What we have unquestionably right:
-The position of the galley.

-The position of the door openings.

B. What we can conclude with certainty should be added or altered:

- The air shaft located forward of the forward galley bulkhead.
- A steel bulkhead on the forward side of the galley.
- Teak doors on the forward and after doors on each side.
- A skylight running fore-and-aft along the centerline over the forward compartments. (Based on the 1910 sketch plan)
- A skylight running athwartships over the galley. (Based on 1910 sketch plan.)
- An additional porthole forward on the starboard side. (In area of plating reinstated during 1955 restoration.)
- Angle iron forming doorway into donkey room, on after face of house, to be removed. Original type riveted plate and vertical angle bar to be reinstalled.
- Crudely welded beam in after compartment replaced with new beam of proper crown.

C. Recommendations for layout of forward and after spaces:

The puzzle of the house layout comes down to the layout of the spaces forward and aft of the galley. We know that these spaces must contain a petty officers compartment and an apprentices compartment of equal size, and a carpenters shop. Beyond this we have no incontrovertible evidence.

It seems unfortunately true that Captain Pearce's recollections are of little value. His memories of the layout do not correspond to what we know to be true. This leaves us with the SIRENIA layout recalled by Captain Campbell. I feel that in view of the good match of his layout to the existing structure and to the documentary evidence, we would do well to adopt this plan as our model. If we come to this decision, we should follow his plan completely, including positions of bunks and other fittings.

Assuming that the original specifications for BALCLUTHA are no longer in existence, we are unlikely to ever arrive at an uncontestable layout of the house. In adopting Campbell's SIRENIA layout, we would at least be following a plan which is reasonable in terms of physical and documentary evidence and is derived from a reliable source, as close to the original vessel as we are likely to come.

9. Loose Ends

-Apparently there was no skylight over the carpenters shop. None is mentioned in the timber list. It is tempting to install one, but does not seem justifiable on the basis of our information.

-The current galley range apparently dates from the Packer period, and is bigger than the original British range would be apt to have been. We should continue to investigate the

possibility of finding or making a replacement. If we want to build one, we have drawings from South Street Seaport of the original range of the WAVER TREE, which is the right period and seems to be the right size. The problem is that the ranges can only get in or out of the space through the deckhead.

-The timber list notes the existence of a deckhouse table and table brackets. Galley fittings are noted as such, as is the carpenters bench. What would make sense, in the Campbell plan, would be folding tables mounted on either side of the centerline bulkhead, for the apprentices and the petty officers. "Brackets" for a folding table makes sense. The problem is the use of the singular "table." Can we stretch this and put a table on either side?

-The "Deckhouse Hatch" refereed to in the Connell timber list remains a mystery. It may be that there was a hatch over the carpenters shop, in place of a skylight, to allow escape from this compartment, but there is insufficient evidence to allow this to be recommended.

-The timber list makes no reference to a cover for the deckhouse air shaft. There are, however, materials listed for a "Main deck airshaft skylight" and a "Poop airshaft skylight." According to the 1910 Packers Description, there were only two airshafts in the ship. The timber list may have confused the terminology on these shafts, calling the one forward on the deckhouse "Main deck" and the after one "Poop." It seems clear that the cover for the deckhouse airshaft should be teak, with glass ports.

Part II no 1 Steve Canright Memorandum of August 1991

Part II no 2 Notes on the Memorandum

As it turned out, the steel deck beam was repaired by welding, this saved the ends of the original beam and caused the incomplete repair from 1955 to disappear.

During the construction, it was eventually decided to remove the door frame of the donkey engine room and to replace the missing steel angles using the forward end of the house as a pattern. The new steel angles had rivet heads added following the correct pattern, but were welded in place.

In the process of dismantling the area forward of the galley, it was discovered that the bulkhead for the galley was made by placing a steel sill across the width of the house (about 18 inches high). This had been cut off at some point and was replaced by burning out the original rivets and cleaning up the short angles. The new sill plate was installed using rivets run through the original holes and the new steel. Above the sill there were no rivet holes in the angle iron indicating a wood bulkhead, this was replaced with tongue and groove matched to that used in other parts of the ship.

Part III Furnishings no 1

Fate can sometimes lend a hand when it is least expected. After contacting the Yarmouth County Museum about the possibility of borrowing their oil painting of Balclutha, the Director/Curator commented that he had a copy of the Specifications for the ship. They had been copied from the original documents by the ship's second master Captain Joseph W. Morrell, of Yarmouth, N.S. His account book had been handed down through his family and was eventually donated to the local historical society. The 15 page handwritten document was copied and transcribed just in time to be available as a source of information for the deckhouse project.

The following is a list of every entry in the Specification and Outfit of the steel ship Balclutha that covers items that are part of or used inside the deck house. This list starts on page 216 of the Account Book.

Deckhouse: To be of iron length size and height to be agreed upon plating under galley to be "16" iron caulked and covered with ?encaustic? Tiles to approval. Arrangement of bunks and etc to owners approval and to be fitted with teak skylight in galley and boys house. page 218

Ladders: One iron ladder on the deckhouse. page 222.

Decks: Deckhouse to be laid on top with 5" x 3" pitch pine Pitch pine waterways all around. Teak faced with mouldings. page 223

Sundries: Carpenter shop to be fitted with bench shelves

Sundries: Carpenter shop to be fitted with bench shelves and lockers. iron bench vise & anvil. page 225

Carpenter and Bos'un's Stores: 2 axes, 1 adze, 1 saw, 1 maul, 1 set rivet hammers, 1 Portable forge, 1/2 cwt, rivets, assorted, 1/2 cwt. nails, assorted, 1 Ratchet brace with six drills, 3 chisels, 3 cope chisels, 1 screw with patent spanner, 4 Squeegees, 18 paint & 6 round brushes, 4 joiners scrapers 4 long tar brushes, 2 short ditto. 6 paint scrubbers, 1 cwt. oakum. page 227 2 lbs. copper nails, 2 lbs copper tacks, 6 paint pots, 1 pr smiths tongs, 1 soldering iron, 2 lbs solder, 2 dozen sheets sandpaper, 2 dozen sheets Emory cloth, 6 dozen brass screws, 1 gross 1/4" washers, 2 rods 1/4" iron, 1 2-handed cross cut saw. page 228

Lamps : 1 Galley lantern, 1 lantern for boy's house, Lamps for petty officers rooms.

Tanks: 1 15 gallon in Boy's House (note another similar tank is noted on Campbell plan for petty officers) page 231.

Part III no 2 Building the Exterior

The deck house was still in an unfinished state when the Donco Marine craftsman finished their part of the contract. The detail work on the house was designed by the San Francisco Maritime NHP curators and built by the resident shipwrights.

The first thing they worked on was restoring and replicating the 10 teak doors called for on the house and across the front of

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The first thing they worked on was restoring and replicating the 10 teak doors called for on the house and across the front of the forecastle. Three of the doors are original, the chart house, and two of the deckhouse doors. One original doorframe was used as a pattern and the others were copied from it. One original brass sill plate was copied for the six doors. At some point, an original sidelight will be used as a pattern to replace a missing light and to replace the interior part of a second light.

Curators and shipwrights consulted on the design of the air shaft cover and skylights. A broad knowledge of ship board practice and period photos of other British ships of Balclutha's time resulted in a design that is very close to what would have been there although no photographs have yet been found that show these specific details. These varnished teak structures look elegant and truly show the Victorian times in which the ship was designed and built. See plan # for details of these items.

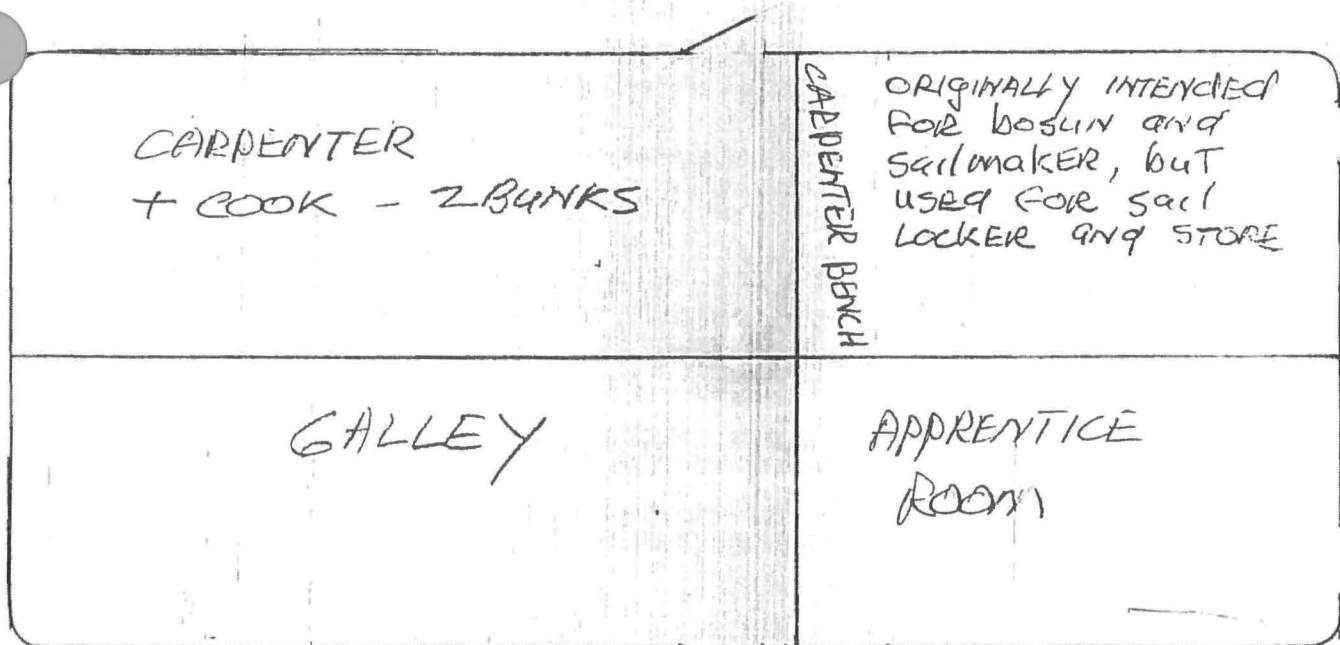


[illegible]

A hand-drawn floor plan of a ship's deck, oriented with the bow at the top. The plan includes the following labeled areas:

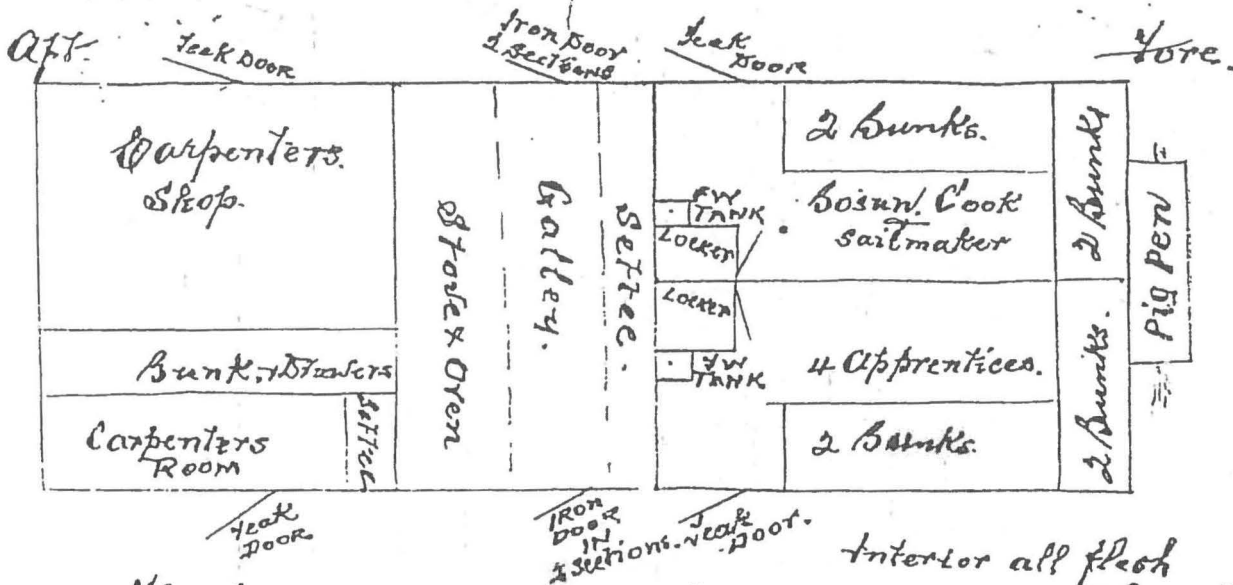
- Top (Bow):** A small rectangular area labeled "Bow".
- Top-Left:** A rectangular area labeled "Carpenter's Cook".
- Top-Center:** A rectangular area labeled "Table" and "Door".
- Top-Right:** A rectangular area labeled "Originally intended for Bomb" and "fixed as sail cochen + stove".
- Middle-Left:** A rectangular area labeled "Two Benches" and "through Galley".
- Middle-Center:** A rectangular area labeled "Galley".
- Middle-Right:** A rectangular area labeled "Or Division".
- Bottom-Left:** A rectangular area labeled "Cooks Store".
- Bottom-Center:** A rectangular area labeled "Door" and "Galley".
- Bottom-Right:** A rectangular area labeled "Apprentice Room".

The drawing is a simple line sketch with handwritten labels in various orientations. Some areas are crossed out or have additional notes, such as "Originally intended for Bomb" and "fixed as sail cochen + stove".



Campbell plan

Rough Plan of Howard House. not to scale.



The House was. originally grained outside. Interior all floor coloured.

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brass sill plate was copied for the six doors. In 1997, an original sidelight ^{will do} ~~was~~ used as a pattern to replace the missing sidelight and to replace the interior part of a second light.

Curators and shipwrights consulted on the design of the air shaft cover and skylights. A broad knowledge of ship board practice and period photos of other British ships of BALCLUTHA'S time resulted in a design that is very close to what would have been there although no photographs have yet been found that show these specific details. These varnished teak structures look elegant and truly show the Victorian times in which the ship was designed and built. See plan # for details of these items.

Part III no 3 Building the Interior

The most important document for the interior was the Campbell plan, along with a detailed knowledge of ship board practice of the times. The interior design also benefited by comparison with contemporary photos of the other British Cape Horners being preserved in various places. The POLLY WOODSIDE in Melbourne, the WAVERTREE in New York and the FALLS OF CLYDE in Honolulu were useful sources of information.

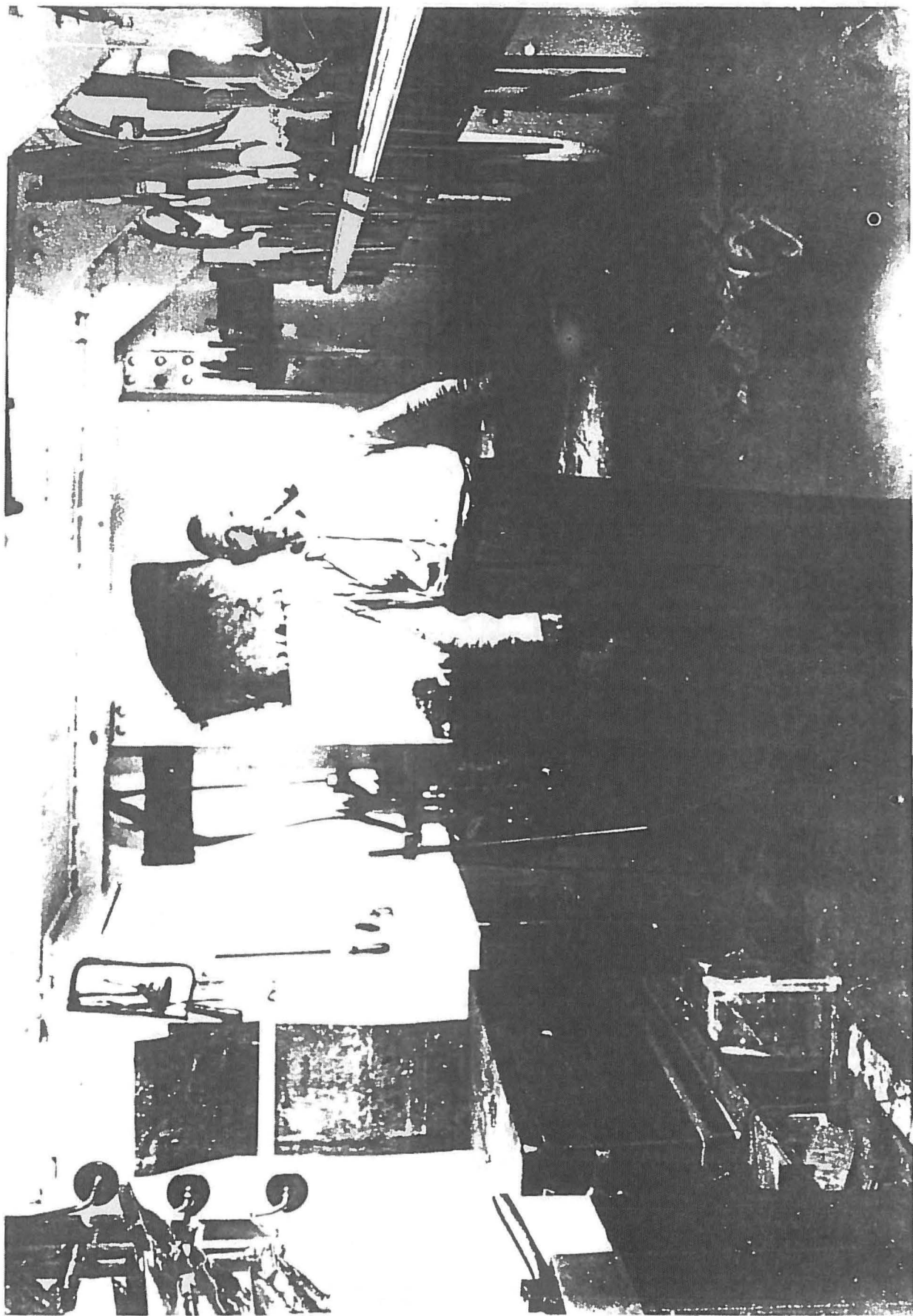
In 1992, when Donco Marine finished their contract, the house had the layout called for in the Campbell plan but none of the interior furnishings. The first space to be worked on was the galley. It had been restored in 1955 and in general the same layout was used this time around. The coal bin was upgraded with a galvanized steel lining and a hinged top for loading the coal.

The steel water tank and the dish rack were replaced on the aft wall, on either side of the stove. A wood cabinet formerly in the carpenters shop was moved into the galley to provide additional storage for small packages such as spices. Still needed for the galley is a steel rack hanging from the overhead to hold an assortment of pots and pans, basins and kettles.

The rooms ahead of the galley where the apprentices and the skilled craftsman lived were built next. The main furnishings being two sets of bunk beds in each space. Lockers, a folding table, water tanks and sea chests are also called for in these spaces. A set of hooks for coats or oilskins was built for each space using as a model a set from the schooner Beulah which was available from the 1955 restoration.

The bunks have had mattresses installed, but still need the bedding and the general clutter that shows in period photos. Small homemade shelves, canvas bags and clothes lines were much in evidence in old photos. Each room should be different, in fact each bunk should show the individuality of its occupant. The colors of the blankets are one way to make this apparant.

At the other end of the house the carpenter's rooms have been given a lot of attention. The Campbell plan calls for a settee along the forward wall. This structure made it a simple matter to build a cabinet above and hide a modern electric power distribution box which needed to get out of sight. The single bunk would have had drawers under it and perhaps a wash stand and mirror may be fitted. The space was occupied by a carpenter, therefore it is reasonable to assume that the space would reflect



N 92-0161 n

about 1904

Carpenter's Shop 4 bk Hawaiian Isles
Another Connell built vessel



his craft more than the rooms forward of the galley.

Across the way, the workshop is getting its share of attention. The space is mentioned several times in the Specifications, which is most helpful because the Campbell plan does not help much in this instance. An antique work bench which dated back to the 1955 restoration has been replicated for use in the shop and an iron vice has been located for the space.

The carpenters shop is one of the few places that an interior photograph is available to help the work. The four masted bark HAWAIIAN ISLES was built by Charles Connell in 1892 or six years after the Balclutha. It is safe to assume that some general patterns would show up even though the HAWAIIAN ISLES was a larger vessel. The photo shows an air shaft which is also present in BALCLUTHA. It shows a work bench along one wall and it shows a rack of tools running under the ports. It will be possible to re-create the feel of such a place but not a twin of what was once there. The museum collection is rich in period hand tools and a carpenters tool chest will need to be located for the space. From the Specifications we know that the shop also had some metal working tools for a shipsmith. Any carpenter of the period would have some metal working skills and be able to make repairs to the metal parts of the ship. Therefore, a portable forge and an anvil will eventually go in the space.

Part III no 4 Existing Furnishings

All the old time items from the 1955 interior furnishing

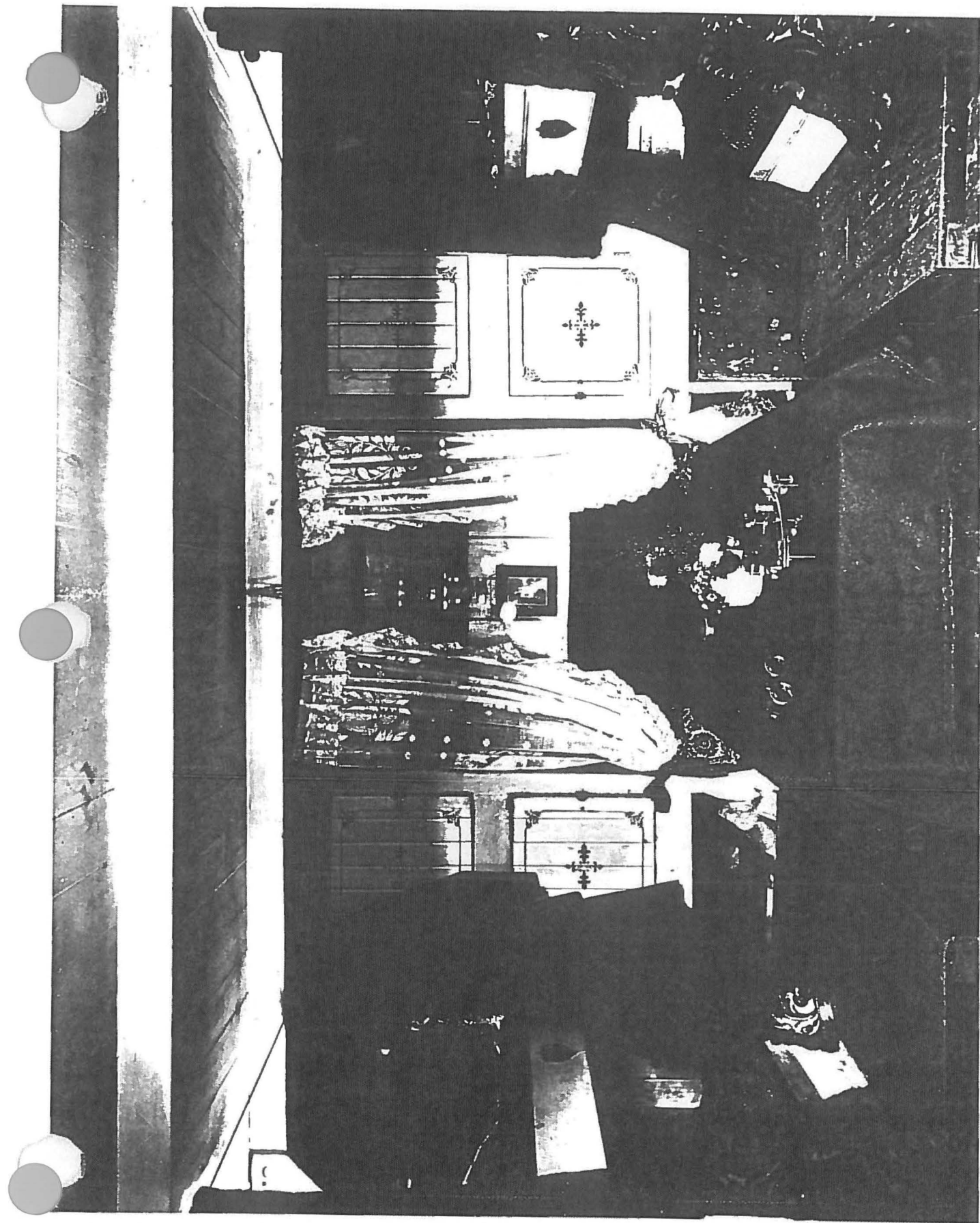
were carefully put away before the heavy construction started on the house. The galley had the most complete outfit so most of the equipment that was in it is or will be reused. An antique harness cask was repaired and replaced in the galley. Typically a pair of these were placed on the compass platform or on the poop. But in our case, it will go in the galley along with a good description of what it was used for. This will protect it from the weather and make it more visible to the visitors.

Previously mentioned items like the tank, dish rack, wooden cabinet and stove were cleaned and painted before being reused. Some of the carpenter tools will go back into the shop, but the grinding wheel seems to be too big to go back and a smaller one will need to be found.

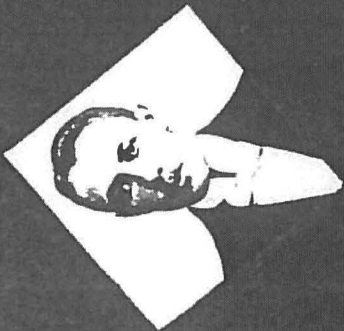
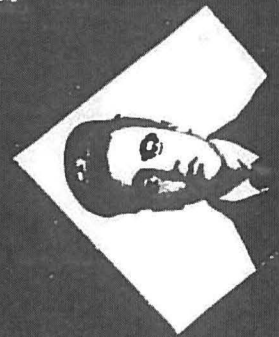
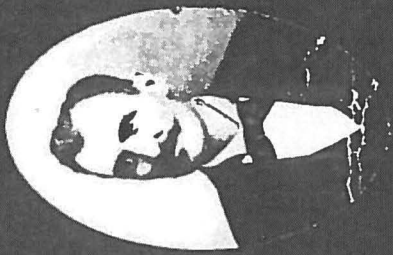
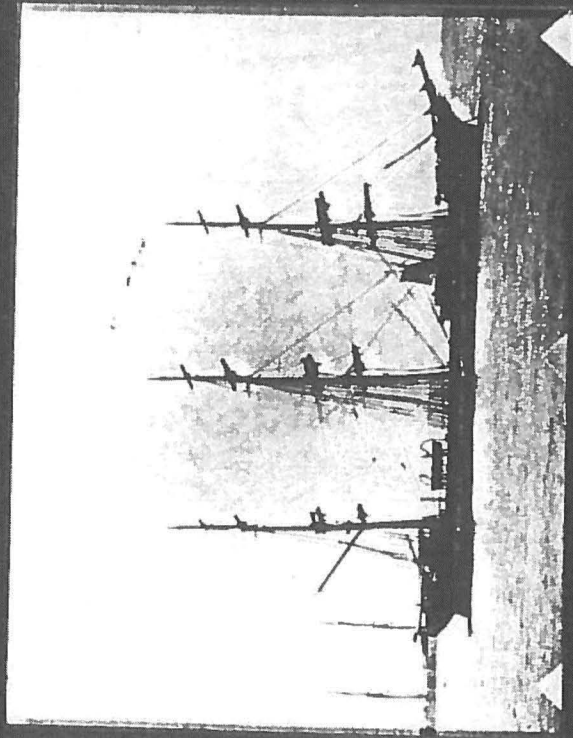
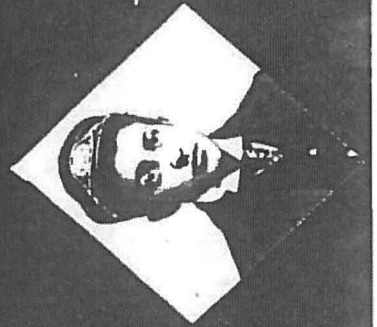
Part III no 5 Furnishings still needed

While much has happened to improve the deckhouse, there is still quite a bit to go in terms of the smaller items that are needed to really make the place look lived in. A basic change concerning furnishings is the removal of the steel gates that until recently covered most of the doors. While providing security they looked out of place and were not inviting the visitors to a closer inspection. Now the plan is to secure small items on an individual basis and to expect some losses to occur.

A careful reading of the BALCLUTHA Specifications that are reproduced here in Part III no 1 will give a good idea what is still needed to equip the deck house as it once was. There is one room that should be regarded as extra special, the Halfdeck. It



V61.12,483nl
4 bk Lynton
Interior of Half Deck



A6.20,662n
Capt Alfred Durkee & Officers aboard Balclutha
Apprentices

was the home of the apprentice officers, boys who would some day grow up to command ships like BALCLUTHA and her kin. There are several other British built square riggers being restored, but only one of them as yet has reproduced this space. Photos from the Falls of Clyde have been studied during this research. It seems likely that BALCLUTHA will be the only other Cape Horner where the Halfdeck will be restored.

There are quite a number of first hand accounts by the boys who started their sea going careers in such surroundings. And there are even a couple of interior photographs, unfortunately taken aboard larger ships than the one we have. The photo of the Lynton while useful should be used with caution. Andy Nesdall a noted ship historian said, "That half-deck photo is misleading; I'm sure that most such hovels were much more primitive, devoid of art, elegant bunk drapes and the fancy medallions (with the M for Montgomery, the owner). ...He also mentions another photo also taken on a Montgomery owned ship and notes, "that firm seemed to treat their apprentices well." (Letter March 23, 1991) There are two group photos of Balclutha apprentices, unfortunately the boys are not named within the groups.

The space lends itself to the fullest furnishing of any part in the deck house because of the first hand accounts and the strong interest shown by the visiting public. The room could be set up to be stepped into and the rest closed off to protect the furnishings. Some form of alarm should be considered if the space is to be furnished in a really extensive manner. Or a cage door of some kind could be re-installed, something I hope to avoid.

Gipsy Of The Horn Rex Clements

Bark ARETHUSA (built 1891 by A McMillan&Sons, 1279 gross tons)
Bound from London to Australia and South America.

I found my new home was a bare, box like apartment about ten feet square, with iron walls and wooden bunks round the three sides. It was half filled with coals, firewood, odds and ends of rope and miscellaneous rubbish, and looked inexpressibly cheerless.
page 18.

Our half deck was a scene of hopeless misery. Situated in the middle of the for'ard deck house, it had a door on either side-ill-fitting iron affairs that even when closed let in avalanches of water. page 38.

In the halfdeck we brought to light again the photographs that had been hastily crammed into sea chests and kit bags when we encountered the first breath of the Atlantic. Various little "gadgets" and knick-knacks presented by friends at home were brought into use; and during our watch below I knocked together, with the good natured assistance of the carpenter, a couple of shelves to hold my little stock of books.
page 41.

A short history of the ship, as told by the Third Mate. page 45.

Caught a shark. After that we set to work to cut the fish up. The tail was triumphantly carried for'ard and nailed to the extremity of the bowsprit, the longer lobe uppermost. This is always the custom when a bigger shark than usual is caught, and constitutes the time honoured decoration of a deep-waterman. pages 59-60.

The confined space of the half deck, cumbered with sea chests and with oilskins and sea boots aswing on the bulkheads - the rough figures in sou'-westers and pilot jackets, the air thick with smoke... page 78.

All hands were hard at it, patching boots; mending clothes and re-coating oilskins. The constant chafe and soaking soon wears the protective glaze from the oilskin coat, and to renovate them we gave them two or three coatings of linseed oil mixed to equal quantities of boiled and raw... oil skin jackets and trousers were then hung out to dry. page 197.

The 'Tween Deck

As built the BALCLUTHA was designed to carry a variety of dry cargoes in her hold and on deck. In the space above the hold called the 'tween deck, was built as a structural member and to improve cargo stowage. Some cargoes like coal would be placed in the hold, others such as general cargo would be stowed in both hold and 'tween deck and still others like lumber in both places. Lumber was also carried on deck.

The 'tween deck is a space about 200 feet long and the full width of the hull. The space did not see many changes except at the bow and the stern. There were a pair of openings added to the stern at 'tween deck level called timber ports which made it easier to load lumber, especially in long lengths. There is an undated blue print of the ports from United Engineering, but there is also a job order from the Union Iron Works for the same work. We therefore, do not know which of the two shipyards actually did the work. As time allows, one or both should be opened and explained to the visitors. There is already a panel in the 'tween deck that shows a sailing vessel loading lumber through her stern timber ports. Although it only existed for a few voyages, the Lumber Period is an interesting time and opening the ports would bring much needed light and air in to the interior of the ship. Recent research has found that the ship was used to bring redwood lumber down to fire damaged San Francisco





Def. 40,5834

PACIFIC QUEEN

SAUSALITO

OCT. 1952

For many of her voyages to the Chignik cannery, the cannery crew was Chinese, but there were also Mexicans in some of the crews. The space is documented by a plan that was drawn in 1922 and revised in 1924. Today most of the space is taken up by a workshop that was built after the 1955 restoration. However, some of the bunks on the starboard side remain as well as some of the partitions that show in the plan.

During the 1955 restoration, a door was fitted with a grill so that part of the space was visible. A panel was installed with a Chinese language newspaper article that tells some of the story of the "Fish Shop": contract workers putting in long hours to process and can the summer salmon run in Alaska.

While most of the ship is restored to the British period, here is a clear case that warrants another period. As least some of the bunks should be re-built, they are missing their bunk boards, and the various barrels, blocks and hardware that are now stored in the space should be removed. The space could have an ethnic feel that is completely different from the rest of the ship.

Some very specialized research will need to be conducted in order to learn more about how the workers lived in this part of the ship. I suspect that bedding may have been different from the usual straw mattress used on shipboard, perhaps some form of futon was carried. I doubt that the workers had sea chests as

was common for North European seamen. Perhaps a form of suitcase was used. There are many photos of the Chinese crews lounging around the deck, passing the time as the ship travels along. But I don't know of an historic picture of or even a contemporary description of the living space. In the Park collection is a modern painting that shows the Doctor helping care for a Chinese cannery hand who was sick or injured. This striking image should be displayed in the quarters.

Even the galleys used for the food preparation aboard were segregated. Two of the three large rice pots used aboard are shown in the present t'ween deck display. It should be moved closer to the living quarters and provided with a sign showing where it was formerly located. It was, by the way, one of two galleys in the space under the forecastle head. Today it is restored as the British crew's living quarters.

A small panel could be installed pointing out the port lights in the space. They were not original to the ship, but were installed when the Packer's started carrying people in what was originally the cargo hold. While many ships had ports fitted with storm covers, the Alaska Packer's were the only ones to cast the company house flag into their covers. All three of their vessels that survived into modern times have this unusual feature. Two are museum ships and sport divers off the coast of Southern California often visit the Star of France. Her storm covers are the most prized artifacts from the wreck.

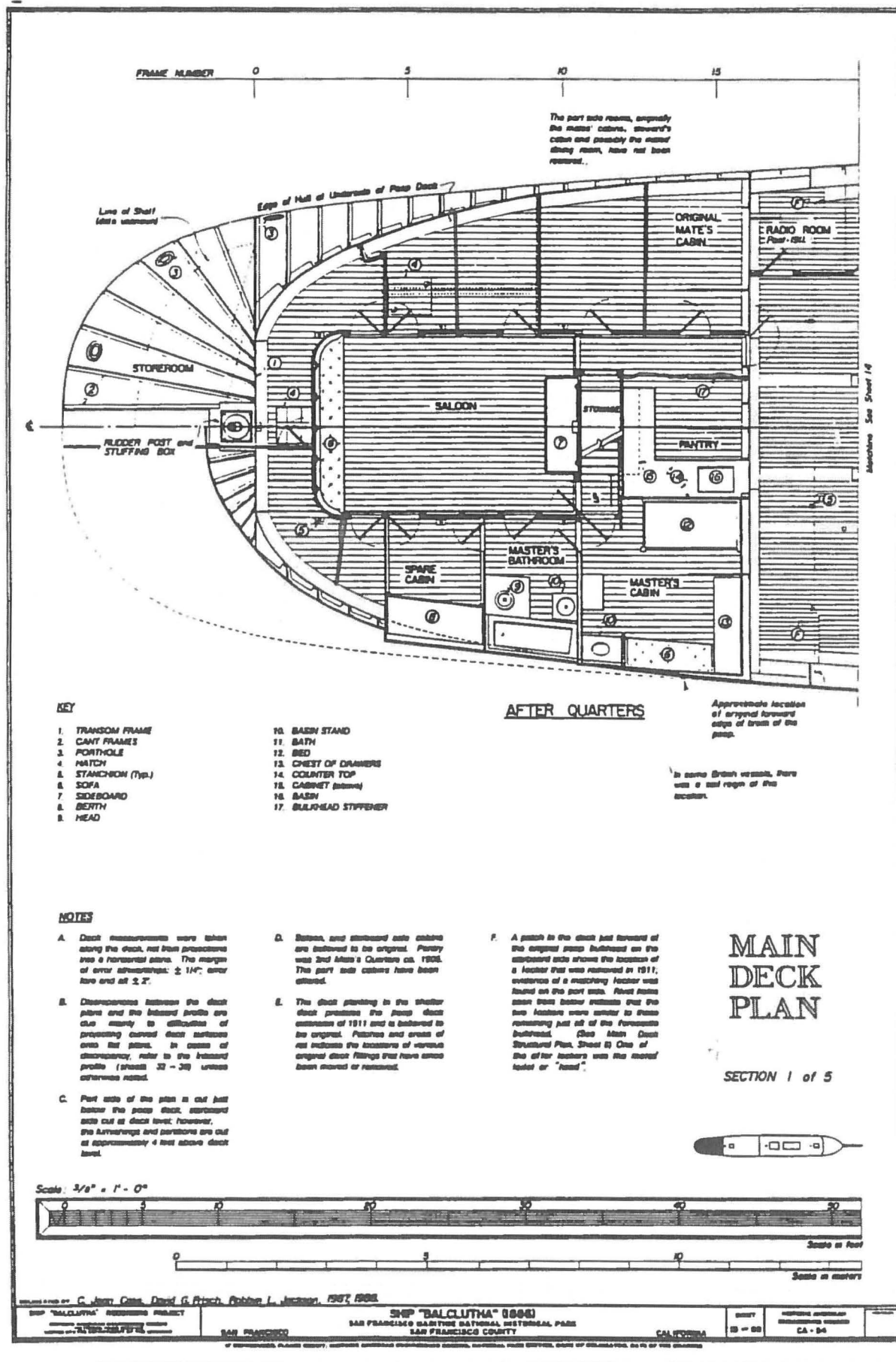
Furnishing the Poop

For centuries, the rooms at the stern of a ship were reserved for the officers and their servants. In 1886, this was still the way it was aboard sailing vessels like the BALCLUTHA. The elegant paneled living quarters built into the stern of a ship with otherwise plain rooms often come as a surprise to those who see them for the first time.

We are extremely lucky that although incomplete, the main parts of the ship's poop accommodation are present and show their century old craftsmanship. Other museums have had to spend considerable sums of money to get back to what the BALCLUTHA already has. It is likely that the most important contribution that Frank and Rose Kissinger made to the ship (aside from not letting it go to scrap) was keeping the stern from being dismantled and losing the bird's eye maple paneling with its mahogany and teak trim. There has been little change in this area since the ship was bought by the museum in 1954. This area lends itself to a room by room survey and a discussion of the people who lived in each of the spaces.

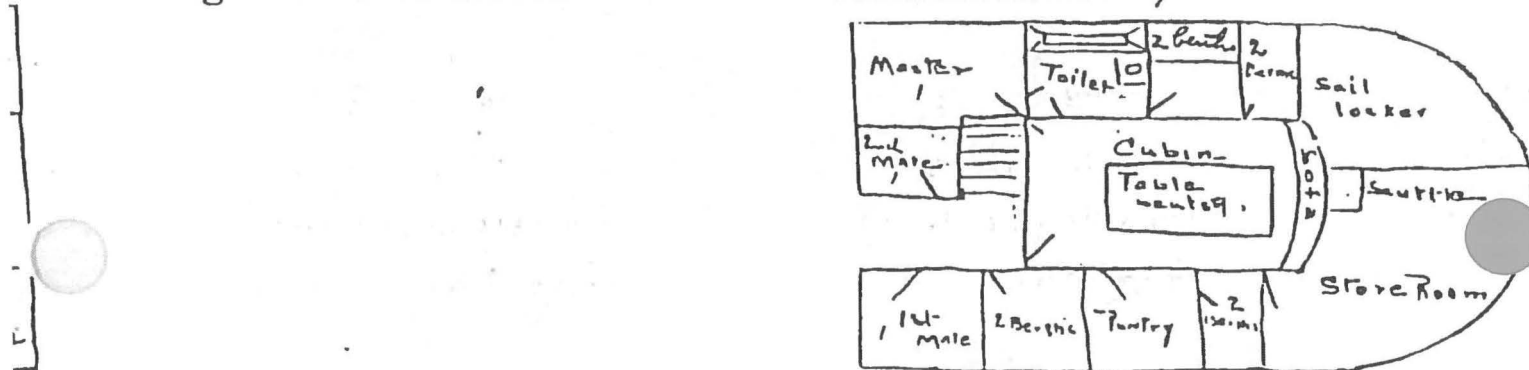
In order to study the area, one should remember that it was built to house the following officers: The Second and Third Mates, who traditionally shared a room. The First Mate who had his own room. The Master of the ship, who had an apartment which consisted of several rooms. And the Steward who served the officers, he had both a pantry to work in and a room to live in. In Balclutha's case, we also know that there was a space that was





ENGINEER BERTH AND MESS ACCOMMODATIONS. (Exclusive of Crew Complement.)

..... 2nd Cabin Fishermen and crew ...
 castle. Chinese 100 berths under deck
 of arrangements of Berth and Mess accommodations.)



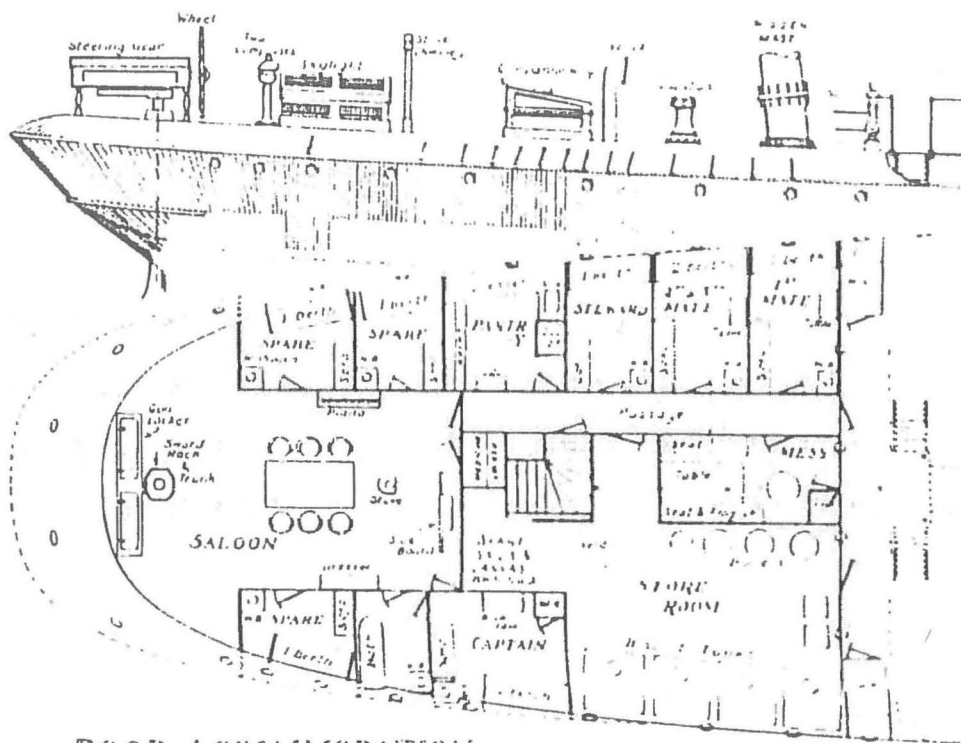
2 Fishermen and crew 1
 1
 1

tes, Italians and Chinese; give size, maker, when installed and condition
 fitted with range by W.S. Ray Mfg. Co., with tiled
 alley, portable, with two thirty gallon pots.

called a hospital. It is a place we do not have much documentation about, but it makes sense to have it aft because the Master had rudimentary first aid skills and the ship's medical chest at his disposal. There was also a stateroom that was a spare room that was available for an agent or a Pilot who might be aboard for a short time. The ship did not carry passengers, except that the Master could and did bring along family members in at least three cases.

The ship was used by the Alaska Packers for many years and was changed to meet their needs especially after 1911 when they extended the poop to house the salmon fisherman. It is from the Alaska Packers records that we have our only plans of this part of the ship. One sketch is not dated but likely dates from 1906 when the ship was returned from Alaska where she had been purchased as a wreck. The other plan is a blueprint that has been re-drawn by HABS/HAER and dates from 1922.

There are no known photographs of Balclutha's interior taken before the 1930's which is after her historic period but there are other photos taken aboard similar ships. Some of them are from ships built in the Charles Connell shipyard. They will be discussed as part of this study. Details of other ships built in Great Britain around the same time will also be considered. The interiors of British ships were surprisingly similar in this period. The decision has been made to restore the ship to the British period so the aim of this discussion is to follow British style and to follow Victorian practice in each case. The recent discovery of the Specifications and Outfit of the Balclutha has



POOP ACCOMMODATION
SHIP WAVERTREE
George F Campbell - 1967

been of immense value in understanding the contents of the poop accommodations aboard the ship.

The Pantry

One example of this is the matter of the pantry. Currently the space is in the center of the poop in a space entirely different from that typical of British ships of the time. The 1906 plan shows the second mate's cabin in the space, presumably with one or two bunks present. The second plan shows the pantry as presently built so that it appears to be a product of the Alaska Packers period. The Specifications tell us that " Pantry [was] to have brass basin, lead pipes and 30 gallons water tank complete and pantry table to be covered with zinc with discharge pipe for basin over-side. This is a different kind of space than what we see today and one that lends itself to a location outside of the center hallway rather than on the center line. There is such a room in the poop that has a hatch in the deck to access the t'ween deck below. And a study of a plan typical of British practice such as one by George Campbell agrees with this thesis. At the present time, there is a situation that never existed historically. There is an Alaska Packers space in the otherwise British poop. This definitely needs to be addressed.

It should be noted that when removed the Alaska Packers pantry could and should be saved for future museum use. There are period rooms in several of the European maritime museums and this one could be the makings of such a space in our future museum, in the Haslett Warehouse. Fitted out with dishes, American canned goods, cooking pots etc it could be the basis of a nice walk-in

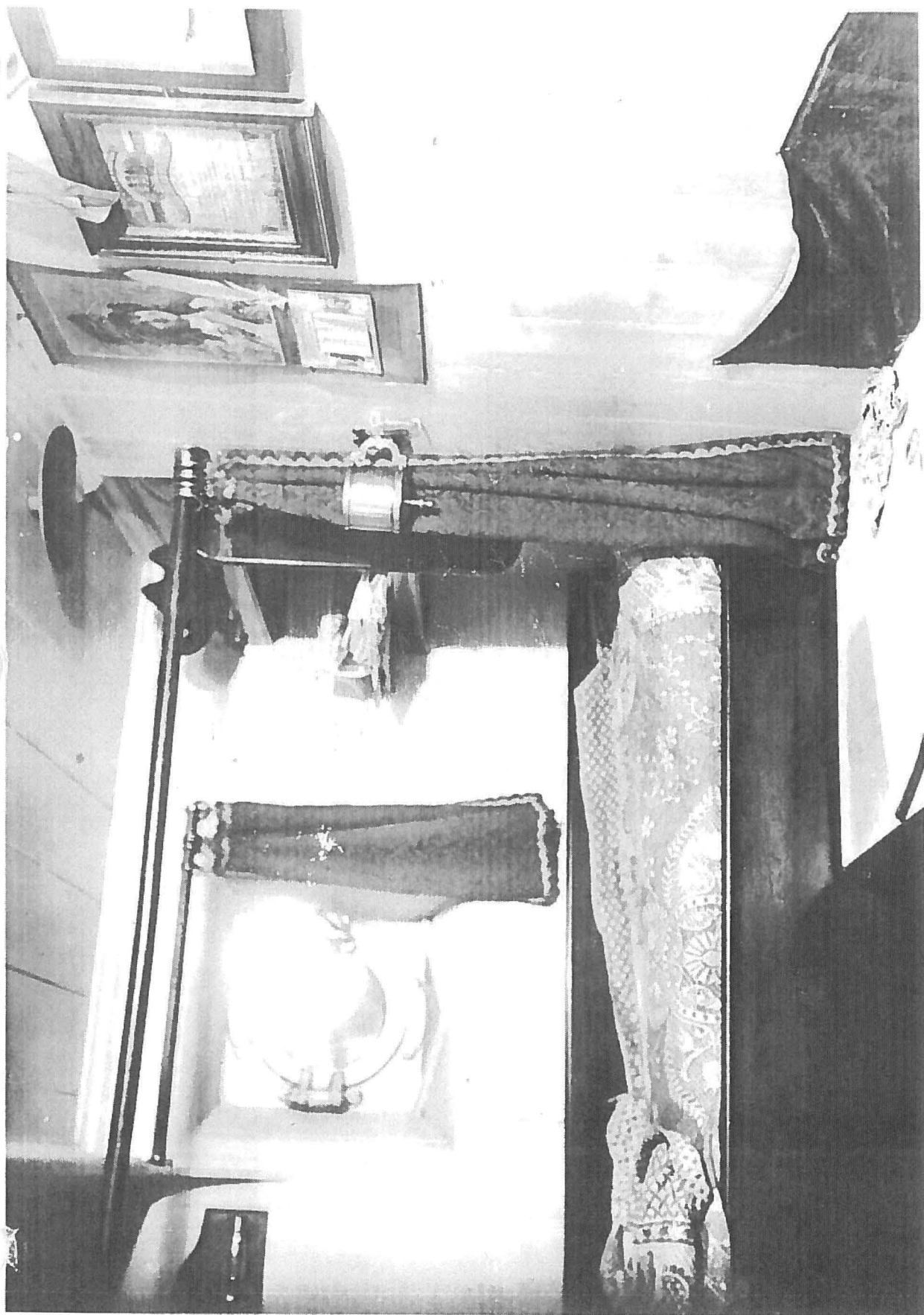
furnished space perhaps with a shipboard cooking display beside it. Or near it.

I propose this area as the space once occupied by the hospital. It is a very short step from a room with perhaps two bunks and a small table to the Second Mates cabin shown in the earliest of the Alaska Packers Association sketches. The partition that used to exist between the hall and the room should be the rebuilt using the appropriate hardwoods and moldings. When the Alaska Packers pantry is removed it may be possible to tell if the bunks were attached to the wall of the master's cabin or the wall of the hall on the opposite side of the room. I expect that the bunk or bunks were on the hall side. The door should be re-built as per the 1906 sketch using an existing door from the poop as a model.

The First Mates Cabin

The woodwork in this space is completely missing from the ship as things now stand, however there is considerable information to draw on in order to do an authentic reconstruction. Traditionally the room is at the forward end of the hall on the port side. Before starting the woodwork, the steel patch over the opening on the forward wall should be removed and the brass port-light re-installed.

There is a photo (P92.016.2n) showing the Mate's room aboard the HAWAIIAN ISLES, a vessel built by the Charles Connell yard in 1892, just a few years after the Balclutha. From it we can see that the wide tongue and groove used to build the walls matches the style in our ship, that the walls are painted and the bunk



Mystic Seaport Photo
P92-016.2n
4 bk Hawaiian Isles
May 26, 1904
Mates Cabin

and other furniture are varnished hardwood. And there is a desk on the forward wall of the room. It was normal practice to build drawers under the bunk and to have a hanging locker in the room. The specifications say, "Captain and officers rooms and staterooms to be fitted with sleeping births, wash basins, toilet racks mirrors and brass hooks. Mates room to have desk fitted." They also call for the floors of officer's rooms and lobby to be covered with best quality linoleum.

From the book Ship Joinery, there is a nice plan of a desk that was used in similar locations and the Connell lumber list tells us that the wood used in the cabin bunk and drawers was yellow pine and mahogany. The same woods could have been used for the desk. There is also a sofa of mahogany and a gable(?) mentioned in the lumber list.

From other parts of the Specifications, there is mention of a brass lamp and a fixed wash-hand basin. This last item is in the museum collection and could be re-installed in the Mates and other cabins. There are three or four of these basins that were found on the ship when it was purchased in 1954. There would have been a sea chest in the room. Some kind of clothes rack or hanging locker may have been present also.

The Second and Third Mates Room

This space would have been just aft of the Mate's room and like it, will have to be built from scratch. The doors and the inside of the paneling in the hall give clues to the spacing of the rooms, as well as the 1906 Alaska Packer's sketch. The most notable difference between this room and the Mate's room is that

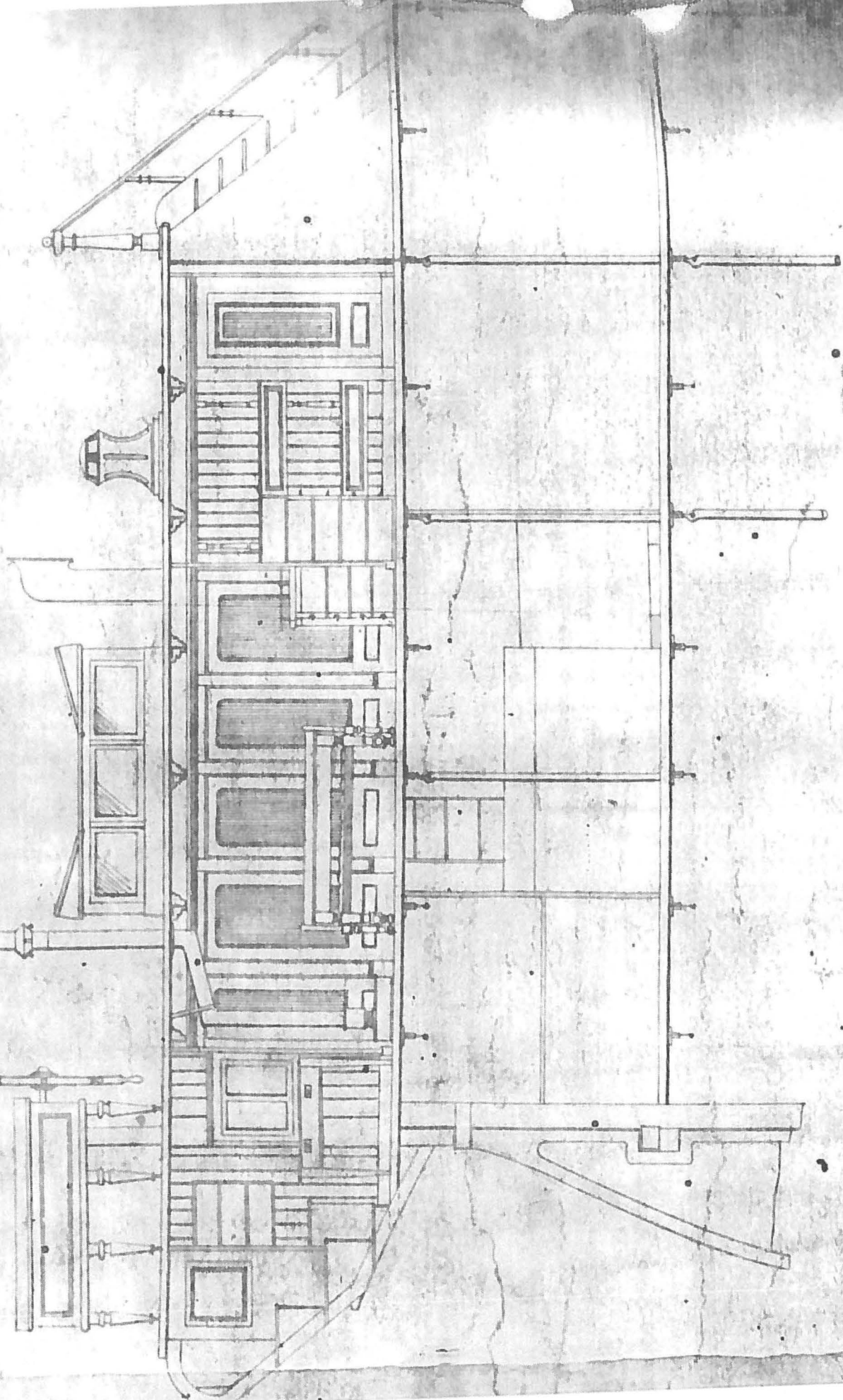
there were two bunks and a smaller desk or perhaps just a folding writing table. The built in bunks and drawers were hardwood and the same wide tongue and groove planks would be visible above the furniture. There would have been a pair of sea chests and a place to hang wet clothing such as oilskins. The same carpentry text book mentioned earlier should be used to build the joinery around the port light. Oil lamps were used in each of these spaces and are mentioned in the Specifications.

The Steward's Room

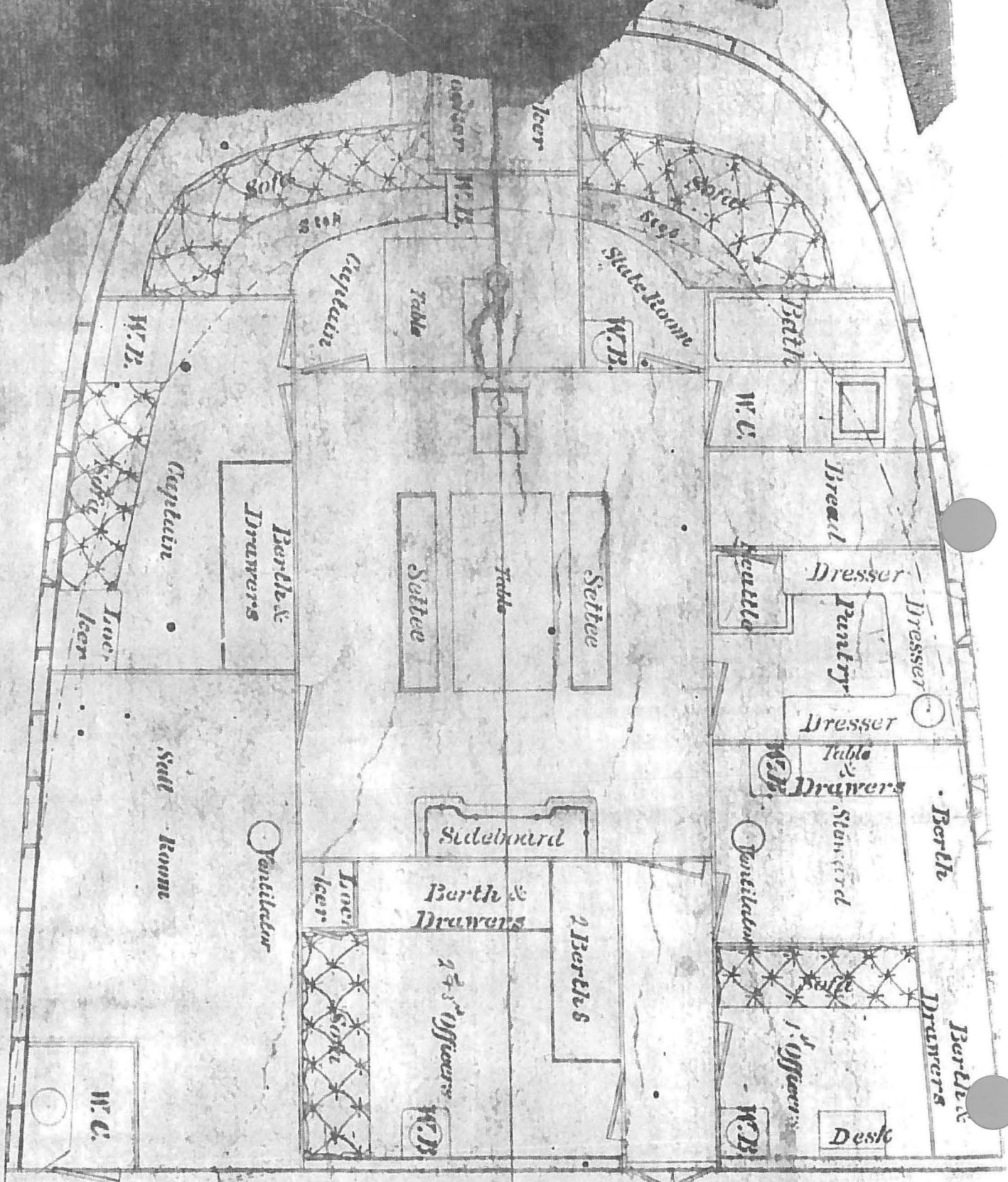
This space would have been much like the Second and Third Mate's room except that it only had one bunk in it. There is not much mention of it in the Specifications, however the Lumber list does have a few items that relate to the space. Unlike the seamen, the steward could stay with the ship for more than one voyage. Having a cabin aft was part of the reason that he stayed.

The Pantry (British Period)

Again moving aft this room was a place where the Steward would store cabin foods, mostly canned and bottled goods and serve them along with the portion of the meals that had been cooked in the galley in the deckhouse. Quite a bit of information is available about this space. The Connell papers cover the dishes, cooking utensils and other pantry items quite completely. There is a hole in the shell plate that, I believe, once was the drainpipe for the sink in this room. The hatch in the deck was available to get into the aft end of the hold where the bulky foods like flour and salt pork were kept. There is a description of the Apprentices helping the Steward load cabin stores through



ALCINOUS Ironship, 1882 by Barclay & Coker
page 28'



a hatch in the deck of the saloon that is very similar to the Balclutha's arrangement. The ship is the MAIN built by Charles Connell in 1893, "Captain German hailed me from the poop with scarce concealed ill humour, 'Away there deMierre, get your half-deck crowd along there and help the Steward stow all this mess of stores down in the lazarette.' We put Morris and Paddy down the lazarette hatch, under the deck of the saloon, the rest of us passed the stuff along and we had it down there and stowed while the Steward was still goggling over his lists. While we replaced the small hatch, Morris and Paddy nipped into the half-deck to unload their jerseys which they had stuffed with cabin bread and a couple of tins of salmon." page 25. H.C.deMierre, Clipper Ships to Ocean Greyhounds, (London: Harold Starke Limited, 1971.)

The Hallway

A fore and aft hallway that retains most of its original wood paneling connects all the rooms discussed so far. One exception is the loss of the metal screening at the top of the partitions and its replacement with scrollwork installed by the Alaska Packers. These white painted decorative elements are typical of American shipbuilding. The bark CHARLES W.MORGAN of 1841 has exactly this same element in her living quarters. The small mesh wire screen should be restored along the overhead. There are ventilation grills in the lower part of the doors that should be checked for missing elements and repaired or replaced. The grills in two of the doors are still blocked off, these should be reopened for better air circulation in the rooms. The Packers scrolls should be saved in case the rooms in the poop

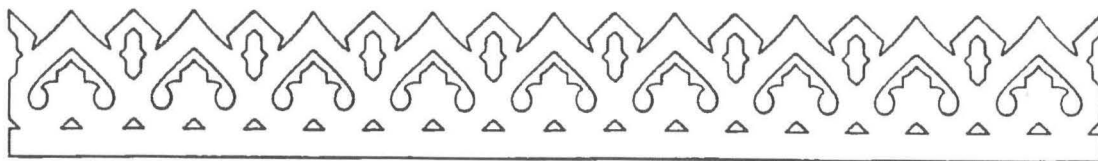
extension they built are ever restored. Pictures show the same scrolls in place over the partitions there.

The Lazarette

The space farthest aft and behind the saloon was divided in half, one for storage of boatswain's stores and the other was the sail locker. The spaces have names carved into the door frames which may be British or American. There is a special hatch in the poop deck that gave access to these rooms. It is interesting to note that the sails were stored right next to the master's rooms, it gives some idea of how important and valuable was the ship's inventory of spare sails and canvas. Presently missing are the shelves and gratings for the room called for in the Specifications. However this is not an area that is of much interest to visitors, so will most likely be left as it is. At an unknown date this room had certified for boatswain's stores carved on the doorframe.

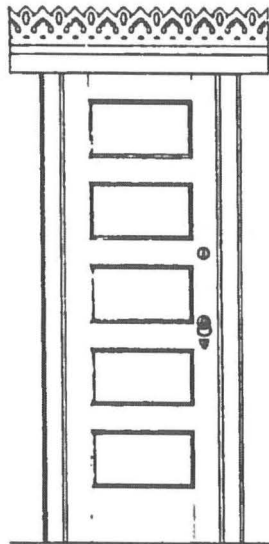
The Storeroom

Moving forward on the starboard side is a space that is certified for storage and has one wall in place and one wall missing, as shown in the 1906 sketch. Marks and a change in the color of the deck planks show where the wall was. It is likely that the room was used for the ship's Slop Chest during the British period. This refers to the place that the sailors would come to; in order to buy blankets clothes, tools and most important tobacco. The sailors were often overcharged for these products, but there was no place else for them to go for what

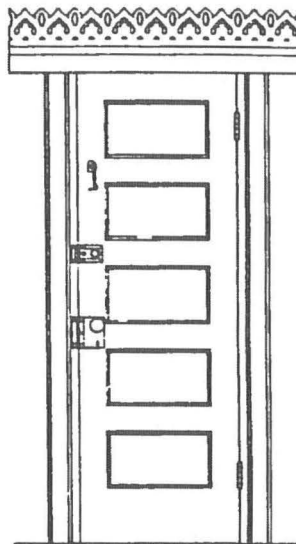


Wooden Grillwork Detail Scale is 1/2 Actual Size

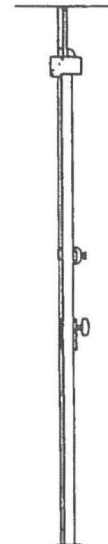
Grillwork opposite pantry in officer's quarters (depicted here) is slightly smaller than grillwork in shelter deck



Exterior Elevation

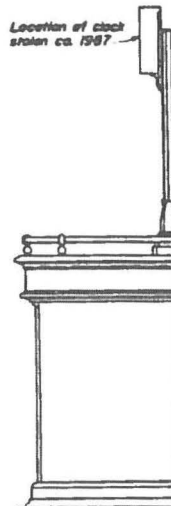


Interior Elevation

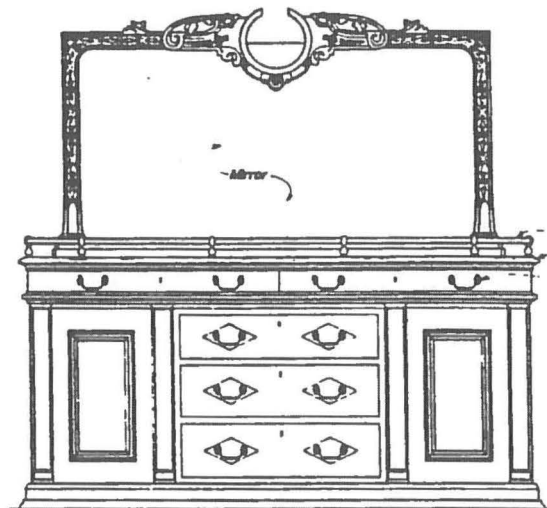


Jamb

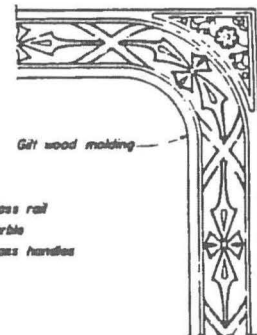
CABIN DOORS - SHELTER DECK



Side Elevation



Front Elevation



Gilt wood molding

Brass rail
Marble
Brass handles

Profile

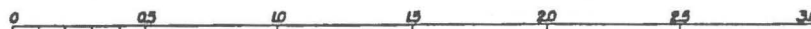
CREDENZA - CAPTAIN'S CABIN

Detail Scale: 1/2" = 1' - 0"

Scale: 1 1/2" = 1' - 0"



Scale in feet



Scale in meters

DESIGNED BY: Louis E. Scharf, 1920
SHIP "BALCLUTHA" RECONSTRUCTION PROJECT

SAN FRANCISCO

SHIP "BALCLUTHA" (1886)
SAN FRANCISCO MARITIME MUSEUM, HISTORICAL PARK
SAN FRANCISCO COUNTY

CALIFORNIA

SHEET
00 - 00

OFFICIAL RECORDING
ENGINEERING DRAWING
CA - 94

IF DIMENSIONS, PLEASE CHECK: ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN FEET, UNLESS OTHERWISE NOTED. DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

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a hatch in the deck of the saloon that is very similar to the Balclutha's arrangement. The ship is the MAIN built by Charles Connell in 1893, "Captain German hailed me from the poop with scarce concealed ill humour, 'Away there deMierre, get your half-deck crowd along there and help the Steward stow all this mess of stores down in the lazarette.' We put Morris and Paddy down the lazarette hatch, under the deck of the saloon, the rest of us passed the stuff along and we had it down there and stowed while the Steward was still goggling over his lists. While we replaced the small hatch, Morris and Paddy nipped into the half-deck to unload their jerseys which they had stuffed with cabin bread and a couple of tins of salmon." page 25. H.C.deMierre, Clipper Ships to Ocean Greyhounds, (London: Harold Starke Limited, 1971.)

The Hallway

A fore and aft hallway that retains most of its original wood paneling connects all the rooms discussed so far. One exception is the loss of the metal screening at the top of the partitions and its replacement with scrollwork installed by the Alaska Packers. These white painted decorative elements are typical of American shipbuilding. The bark CHARLES W.MORGAN of 1841 has exactly this same element in her living quarters. The small mesh wire screen should be restored along the overhead. There are ventilation grills in the lower part of the doors that should be checked for missing elements and repaired or replaced. The grills in two of the doors are still blocked off, these should be reopened for better air circulation in the rooms. The Packers scrolls should be saved in case the rooms in the poop

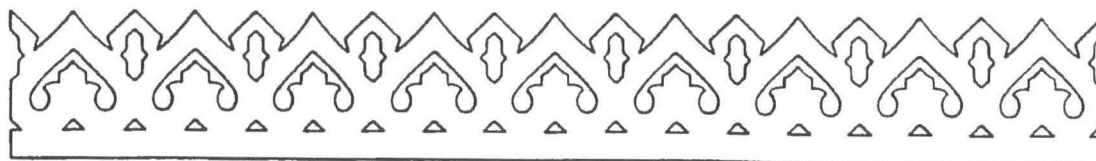
extension they built are ever restored. Pictures show the same scrolls in place over the partitions there.

The Lazarette

The space farthest aft and behind the saloon was divided in half, one for storage of boatswain's stores and the other was the sail locker. The spaces have names carved into the door frames which may be British or American. There is a special hatch in the poop deck that gave access to these rooms. It is interesting to note that the sails were stored right next to the master's rooms, it gives some idea of how important and valuable was the ship's inventory of spare sails and canvas. Presently missing are the shelves and gratings for the room called for in the Specifications. However this is not an area that is of much interest to visitors, so will most likely be left as it is. At an unknown date this room had certified for boatswain's stores carved on the doorframe.

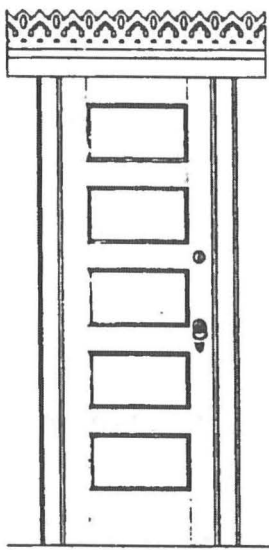
The Storeroom

Moving forward on the starboard side is a space that is certified for storage and has one wall in place and one wall missing, as shown in the 1906 sketch. Marks and a change in the color of the deck planks show where the wall was. It is likely that the room was used for the ship's Slop Chest during the British period. This refers to the place that the sailors would come to; in order to buy blankets clothes, tools and most important tobacco. The sailors were often overcharged for these products, but there was no place else for them to go for what

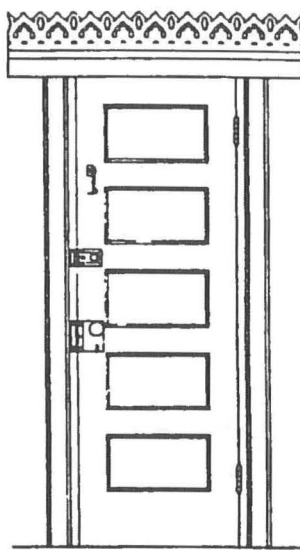


Wooden Grillwork Detail Scale is 1/2 Actual Size

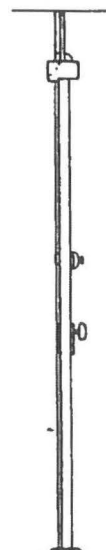
Grillwork opposite pantry in officer's quarters (depicted here) is slightly smaller than grillwork in shelter deck



Exterior Elevation

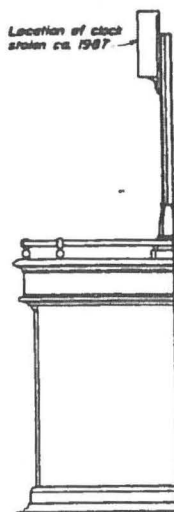


Interior Elevation

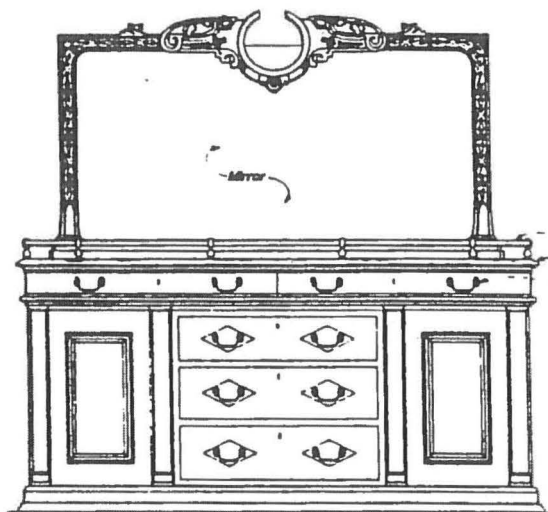


Jamb

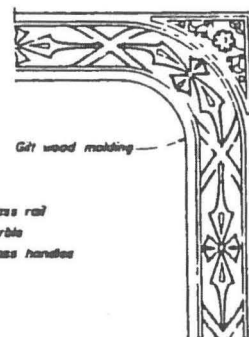
CABIN DOORS - SHELTER DECK



Side Elevation



Front Elevation



Gilt wood molding

Brass rail
Marble
Brass handles

Profile

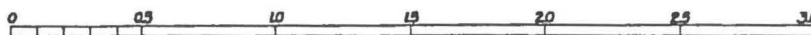
CREDENZA - CAPTAIN'S CABIN

Detail Scale: 1/2" = 1'-0"

Scale: 1 1/2" = 1'-0"



Scale in feet



Scale in meters

DESIGNED BY: Larry E. Spencer, 1980

SHIP "BALCLUTHA" RECONSTRUCTION PROJECT

ARCHITECT: JEFFREY L. SPENCER

SAN FRANCISCO

SHIP "BALCLUTHA" (1866)
SAN FRANCISCO MARITIME HISTORICAL HERITAGE PARK
SAN FRANCISCO COUNTY, CALIFORNIA

CALIFORNIA

SHEET 1
00 - 00

INTERIOR ARCHITECTURAL
DRAWINGS
CA - 54

IF DIMENSIONS VARY, SHEET 1 INTERIOR ARCHITECTURAL DRAWINGS, SHEET 00 FROM SHEET, SHEET OF SHEET 1 TO SHEET 54 OF THE SET

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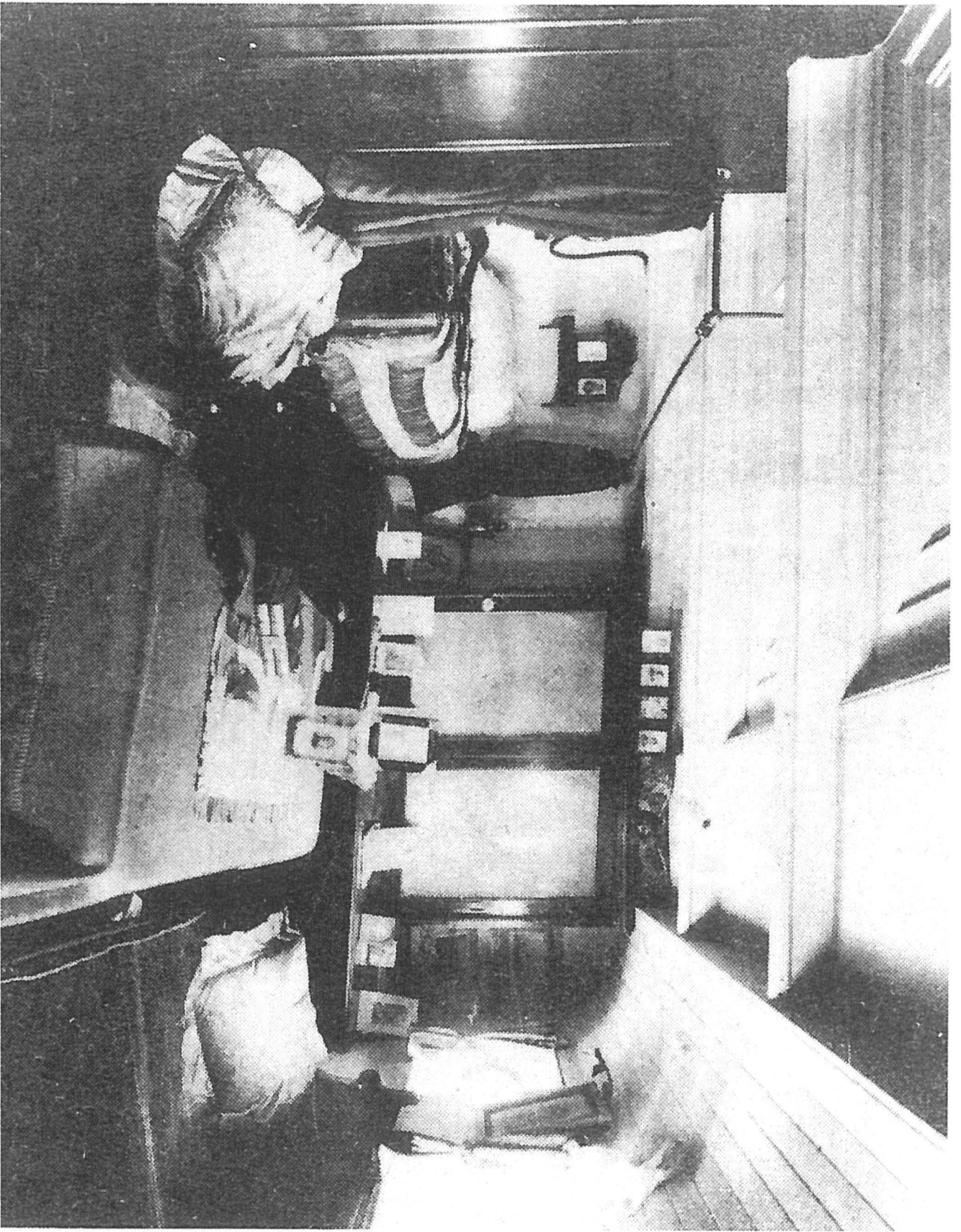
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San Diego State University
National Historical Park
Bjorkhelm Hester
Photographic Collection

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(Title 17, U.S. Code.)

U60.12,490n1

WANDSBEK (bH, 1892; bark, 7m) Tacoma, WA? 1904?





L to R

Capt Robinson

Capt Petersen

Capt Jones

Sitting in Balclutha saloon while ship was being towed
across Bay to dedication July 24, 1955

A 10, 4, 503 PL

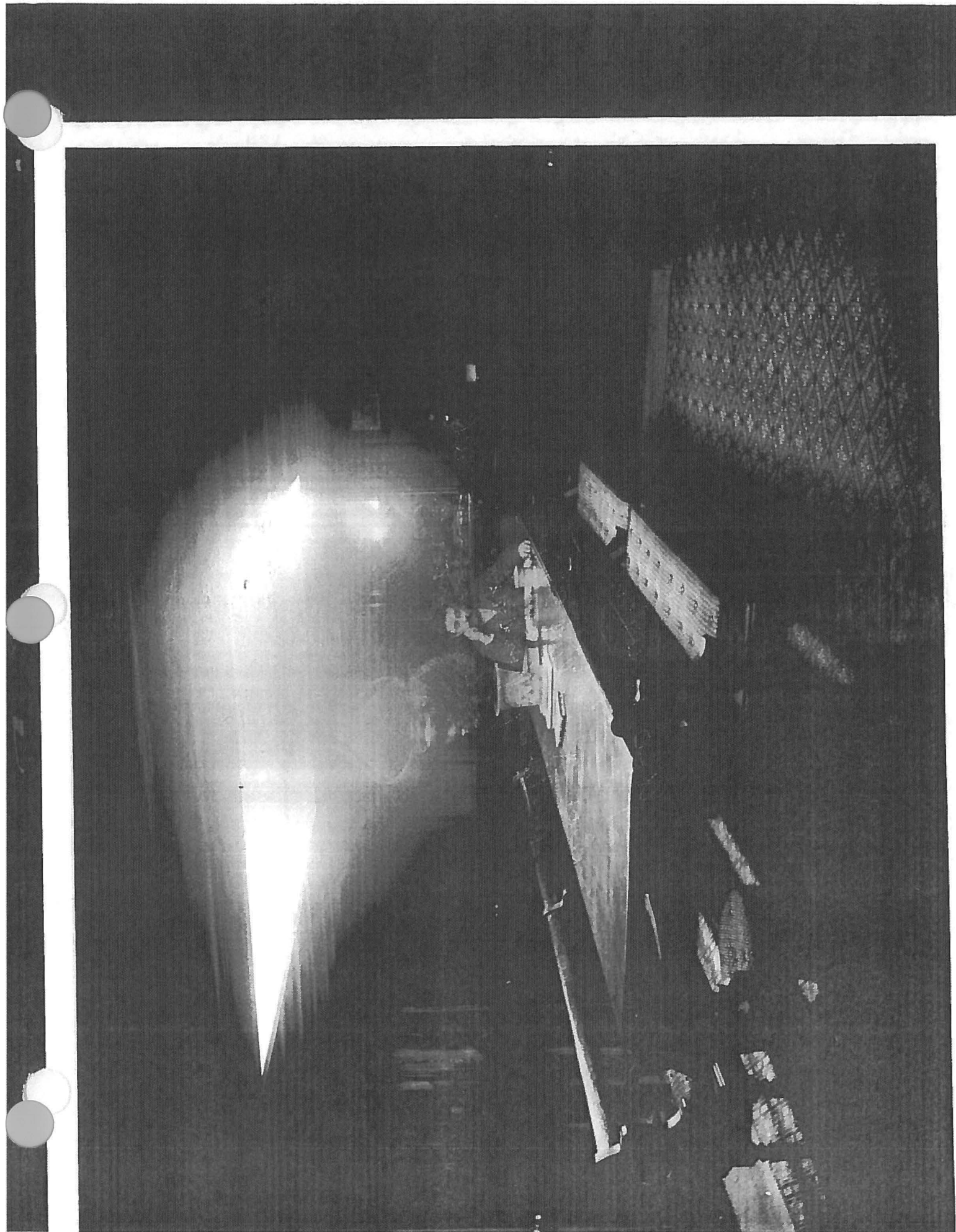
S.E. Chion photo by Bob Campbell

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The Saloon

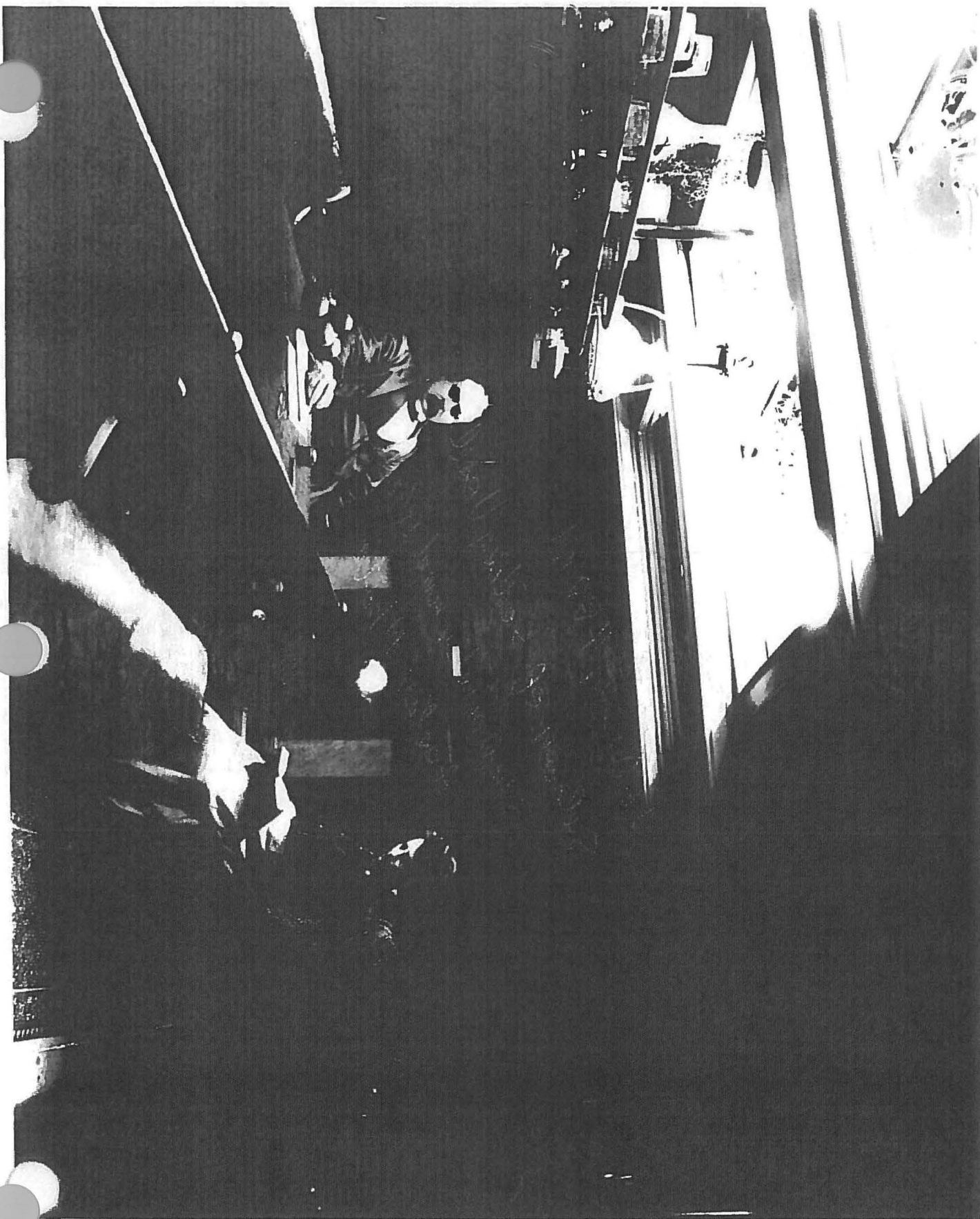
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U60,12,470m
Saloon of Sailing Ship
photo by Hester



V60.12,444n1
Saloon of Sailing Vessel
Hester Photo



V60.12,480n1
Saloon of Sailing Vessel
Shipmaster and wife
Hester Photo

called for full dinners to be served. The early Alaska Packer's sketch shows a table that seats nine and the glasses, dishes etc in Balclutha's Specifications came in groups of twelve, so a full size table was used in this space.

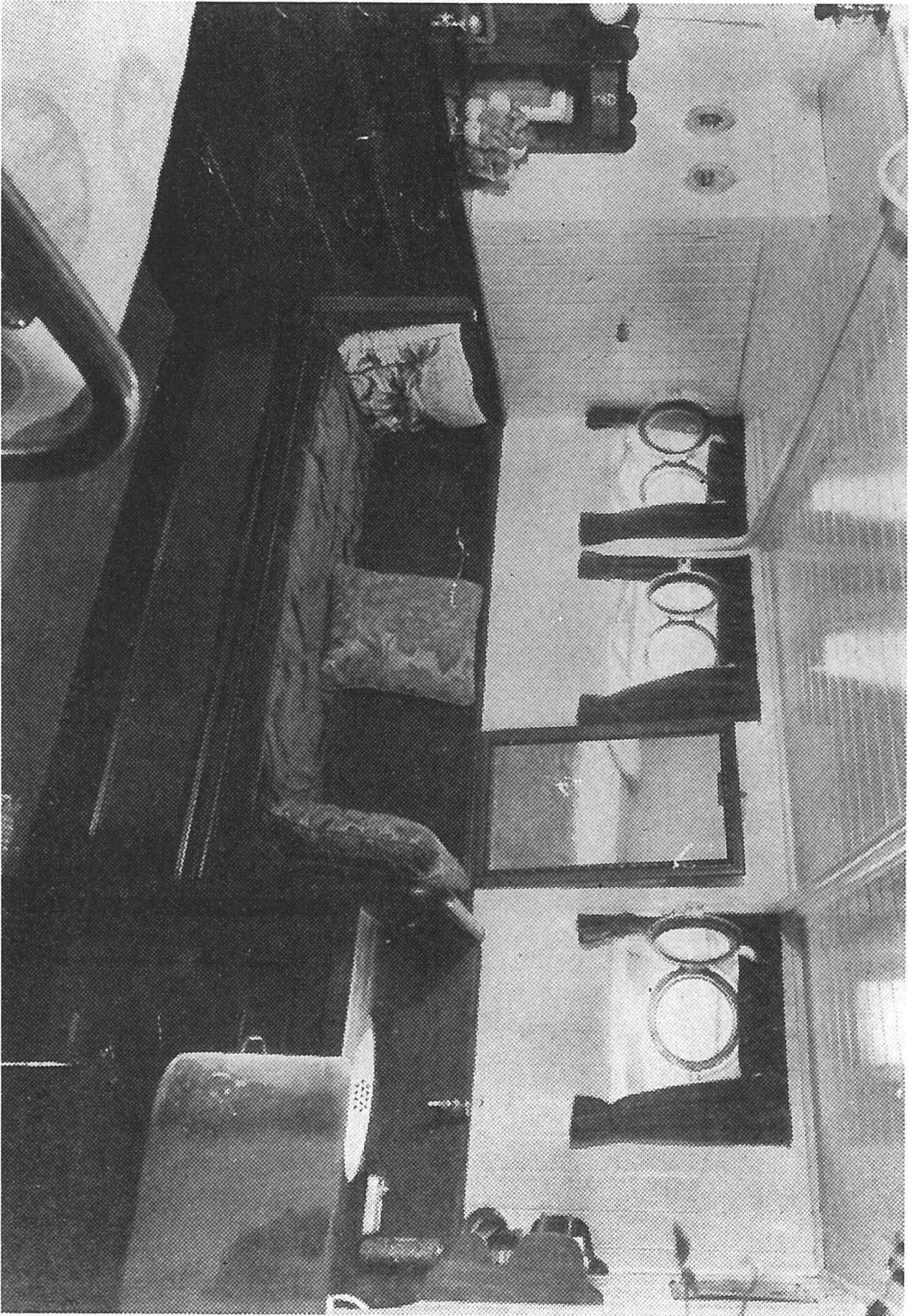
Captain P.A. McDonald was in command of several British built square-riggers on the West Coast, he says of them, "In British ships the officers dined together. At sea as well as in port...Also there is the brochure of the After Quarters of the "Balclutha" Showing among other things what appears to be a tea table Seating two or possibly four people and thus could hardly have been the Saloon table where Captains and Officers would take their meals together." (letter to Karl Kortum Sept 21,1967) Captain McDonald supplied the library with several drawings of floor plans of vessels that he had served aboard. They all show a larger table than is currently in place.

At the present time, a full widths wire barrier screens off the Saloon. This is not the way this kind of thing is done aboard many historic ships like the STAR OF INDIA, the CHARLES W.MORGAN or the CUTTY SARK. Rather the whole Saloon is open with the individual rooms opening off it being closed off to protect the historic furnishings. The kind of barrier varies from a rope across the doorway to metal, wood, plastic or rope materials used to prevent entry. Weather or not the present screen is removed it should be modified so that the missing capital on the port side can be re-installed on top of its column. The capital is presently in storage in Building E.

The Balclutha has a swinging bottle and glass rack that is

referred to as a, "swing tray" in the Specifications and it is most likely original. It and its contents would be nearly impossible to protect from the busy fingers of the visiting public if the wire barrier is removed. But if there is a large table and benches under it as proposed, it would be of some help in protecting this interesting period item. It would be worth keeping in place even if there were some losses of the glassware or bottles that are easily replaceable.

The low table and chairs currently in the saloon are of the period but not in keeping with the new information available from the Specifications about the ship. A brief note in the August 1966 Sea Letter mentions refurbishing the Saloon, " and they now show signs of life aboard under the reign of a Mrs Captain and her family." Their continued use is questionable, unless more research confirms their placement in this setting. The sideboard at the forward end of the room has provision for a clock, this should be replaced with a clock of British manufacture and the wood surround repaired as necessary.



VM 6.5 B31R4 Pam P3
Deux Cabins - Pacific Wheel

Permitted Only
Permission

of
Hine
Historical Park

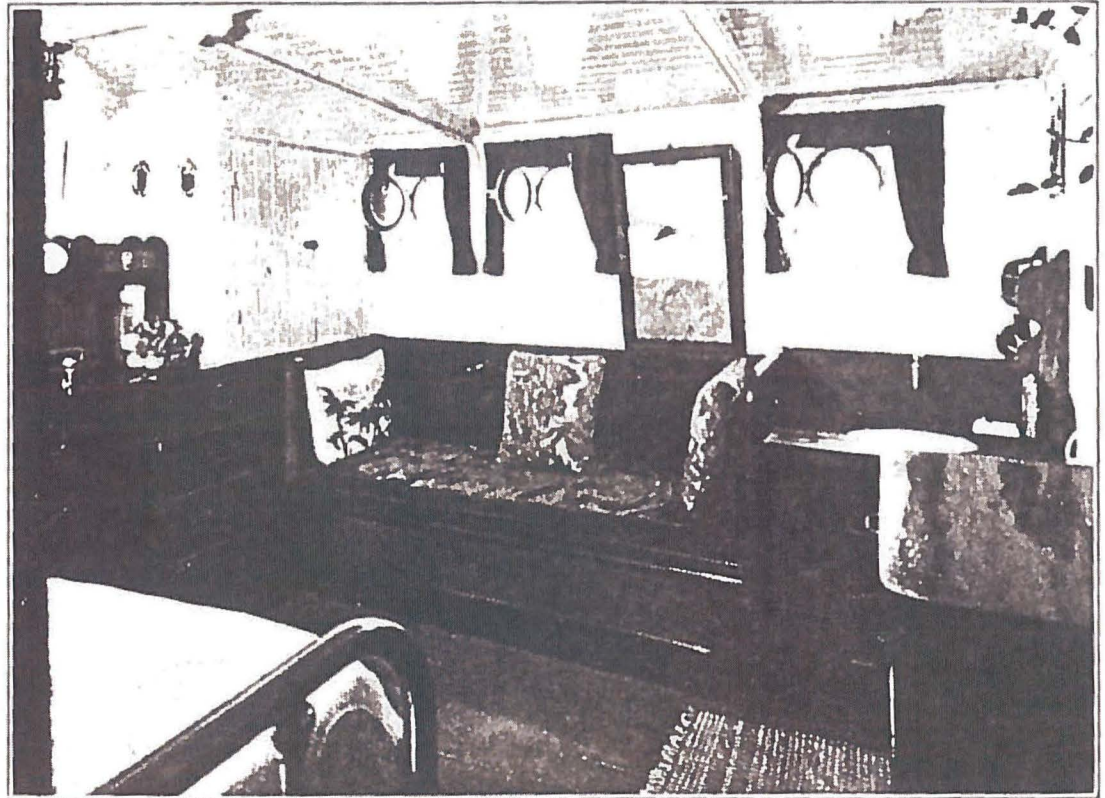
Photographic Collection

may
law.

aquariums were caught with a hand line and hook hung over the side of a boat piece of fish for bait."

HOLD: This will be the storage place for everything not needed on the upper decks,—a space 200 feet long, 38 feet wide, and 10 feet high—sufficient to accommodate as much or as little baggage, equipment or possessions as you desire to bring on board—a toothbrush or a truck load. Bring your own automobile and take it on trips inland or travel across the country from one port to the next.

Masters
Cabin
about 1935



One of the De Luxe Cabins for Married Couples

CONCESSIONS: Placed at convenient points on the main deck will be a counter, refreshment stand, and booths where many novelties from Europe and the Orient will be for sale,—and other concessions of interest to the patrons and patrons of the enterprise.

bronze bell placed in a protective harp. It shows quite clearly in a photo taken in 1925, by Dr M.P. Kaufman (SAFR # P80-004a.4n). The bell is another item that should be findable in the marine antiques market. It will be cheaper to buy one that to make a custom casting. The mounting hole is still visible in the top of the teak wheel box. It functioned as part of the time keeping equipment aboard the ship.

It may be necessary in coming years to change the size and shape of the size and shape of the cover of the mizzen hatch. There is a real need to make more of the BALCLUTHA accessible to handicapped visitors. The mizzen on all three levels is the best way to solve this problem. Installation of a chair lift in part of the hatch along with the current stairs, would go a long way toward in answering the accessibility question. A structure that looks as much as possible like the one that was there would be desirable in this area.

The Saloon (continued)

Recent study indicates that the overhead of the Saloon and some of the Cabins are not original. I have found no evidence to

show the type of tongue and groove planks used in the overhead structures on British built ships. The cabin and saloon pictures of the WILHELM TELL, built at Leith in 1891, show that the deck beams were boxed in, forming a series of squares and rectangular spaces across the overhead. Interior photos of Masters quarters are quite scarce, but those available all indicate a similar type of treatment. The Hester photos show the saloons very well. I recommend that the space be changed to follow British style and create a complete structure. Rather than the American overhead and British walls and deck that now exists.

Even though this means removing a structure that has been in place for many years, it is important enough to warrant the considerable time and money to have a complete historic setting.

The only specific document that exists for the space is the Connell Timber List which calls for:

Saloon Skylight	Teak
Saloon Skylight Facings ...	Y Pine
Saloon Bulkheads.....	Y Pine
Saloon Sideboard.....	Oak
Saloon Sideboard.....	Teak
Saloon Sideboard.....	Mahogany
Saloon Settees.....	Oak
Saloon Settees.....	Y Pine P. Pine
Saloon Pilasters.....	Oak
Saloon Table	Oak
Saloon Table Posts.....	Y Pine
Saloon Standard.....	Y Pine

Saloon Door Cintels & Soles...	Y Pine
Saloon Passage Doors.....	Mahogany
Saloon Passage Doors Framing..	Mahogany
Saloon Pilasters.....	Teak
Saloon Sofa.....	Y Pine
Saloon Listings.....	Y Pine
Saloon Mouldings.....	Teak
Saloon Table Top.....	Mahogany
Saloon Stairs.....	Y Pine
Saloon Cieling Grounds.....	Y Pine
Saloon Bath.....	Y Pine W Pine
Saloon Pilasters.....	Y Pine
Saloon Window Shields.....	Y Pine
Saloon Door Panels.....	Y Pine
Saloon Mouldings.....	Teak
Saloon Frieze for Pilasters...	Y Pine
Saloon Lining.....	Y Pine
Saloon Panels and Hanting.....	Y Pine
Saloon Framing Panels.....	Y Pine
Saloon Cant.....	Y Pine
Saloon Panels.....	Y Pine
Saloon Stair.....	Teak
Saloon Doors.....	Mahogany
Saloon Bulkheads.....	W Pine
Saloon Door Linths.....	Y Pine
Saloon Cpts Door.....	Mahogany
Saloon Stair Beading.....	Teak

Saloon Mirror Frame.....Teak
Saloon Mirror Frame.....Y Pine
Saloon Bathroom Door.....Y Pine
Saloon Stair Rail.....Mahogany
Saloon Base.....Teak
Saloon Gilt Moulding.....Y Pine
Saloon Window Casing.....Y Pine
Saloon Grounds.....Y Pine
Saloon Cant.....Teak
Saloon Bulkhead..... W Pine
Saloon Skylight Blinds..... Y Pine
Saloon Window Casing..... Y Pine
Saloon Table Guards..... Mahogany
Saloon Tumbler Racks?..... Mahogany
Saloon Bath Cope..... Mahogany
Saloon Chart Rack..... Mahogany
Saloon Chart Rack..... Mahogany
Saloon Lining..... Mahogany
Saloon Lining..... Teak
Saloon Stair Lining..... Teak
Saloon Storm Rails..... Teak
Saloon Lining..... W Pine

tile re-installed on the deck at some point. The door between this room and the Master's is not original, the doorframe should be enlarged to its original size and a British period door rebuilt for the opening. The current door should be saved, as it is the same style as the 1911 poop extension, it could be re-used or used as a pattern for restoration in that part of the ship.

The Master's Room

Again, the walls are intact but have additions and changes to consider. Most of the hardwood furniture is present and should be studied and used as patterns to make the bunks etc in the other rooms. The room is shown in a 1930's photo and was painted white or at least a light color. There is a layer of narrow Douglas fir tongue and groove over the original wide tongue and groove planks that make up the walls. I believe this Douglas fir tongue and groove should be removed and the original planks painted their historic color. It is possible that there may be some very old paint under the tongue and groove planking. I would like to remove a couple of sample planks to get a better look at what is underneath. Some of the mahogany furniture will need to be moved to remove the tongue and groove sheathing.

There are photos from the Hester Collection (such as the Lynton shown here) that show the Master's rooms. These can add to our knowledge of how this room looked while the ship was still British. They show larger amounts of white paint than is currently present and the rooms were cluttered with pictures and

mementos of the life and travels of the man who lived there. There was a brass rod and curtains for the door mentioned in the Specifications. Visitors often ask the actual location of the boxed chronometer used for celestial navigation. This is where it was placed, it was usually the personal property of the Master of the ship rather than ship's property. Unfortunately the museum does not own an appropriate instrument so one will need to be purchased. Along the same lines a sextant will need to be placed in the captains room to complete the navigation theme. One further quandary concerns the existence of two sinks almost side by side in the Master's rooms. It may be that one of them came from another part of the poop accommodation, perhaps the Mates or Stewards room.

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The Chart Room

The deckhouse with the enclosed chart room shows the Balclutha to be an up to date ship for her time. The space remains largely as built with paneled walls and brass barred windows. The furniture consists of a pair of settees covered with velvet plush and a set of wide drawers that were used to house the ship's (sometimes the Masters) collection of navigational charts. Enclosed within it are a pair of cabinets that were used for the flags of the International Code of Signals. This may have been a change carried out by the Alaska Packers, there is no clear documentation on this point, but they are built with Douglas fir planks.

The main feature missing from the space is the chart table. Some sort of center mounted folding table was present in the room between the settees. There are marks in the deck that indicate the presence of a pair of table legs in the past. This makes sense, because many of the charts were quite large and needed a wide surface to spread out on.

The other details in the room should include a ship's bell clock of British manufacture (the present one is American) and a set of navigational instruments including a pair of dividers, a compass and a Nautical Almanac for the period. Other items such as a chronometer would have been kept in the Master's room.

The current system employing a Plexiglas sheet in front and

Due to the considerable loss of the historic fabric in the area and the current use of the "Shelter Deck" for social events, concerts and meetings it will not be possible to do much about furnishing the space.

One possible idea, is to furnish the First Mates room. It was moved forward when the extension was built to again occupy the forward corner on the port side. There is even a picture of the room as it looked in 1933, early in the Kissenger years. from this it would be possible to re-construct the layout. For further information on this area, see the Poop Appendix, at the end of this report.

The Poop Deck

The exterior of this part of the Balclutha is largely as built, including the 1911 extension already discussed in regard to the interior of the space.

There are two binnacles that have been displayed on deck in

the past. The steering compass, displayed in front of the wheel is missing its top and the compass. It may be possible to find a replacement in the marine antiques market, to date I have had no success in finding a source that can spin a copy of the missing part. Duplicates of the binnacle are known to exist in other museum collections.

There is a binnacle (SAFR # 15731) that used to be displayed on deck as a standard compass. I would like to see it or a similar one back out there. There was such a binnacle in the same area near the forward end of the extended poop for many years.

Near the stern there used to be a large teak block that held the sheet/tack for the crojack. There is now one in place on the starboard side and the one from the port side has long been stored in the ship's work shop. It should be possible to find the mounting holes in the margin plate under the teak deck in the area that it used to occupy. After repair and cleaning, that part should be replaced in its original location.

Back near the steering wheel there used to be a pair of gratings which were used by the helmsman. They gave him greater height, which in turn gave him better leverage on the wheel, especially in stormy weather. They have been missing from the ship for a long time, but show in historic photos like (SAFR # ?) well enough, that they can be rebuilt and installed.

Also at the wheel, there used to be a watch bell, a small

Conclusions

A thorough study of the physical spaces aboard the Balclutha combined with the study of visual and written records has made it possible to come very close to understanding what was once present. Now is the time to make the changes that will show the ship as she once was.

In Scotland, there are two ongoing restorations of similar ships, the CITY OF ADELAIDE and the GLENLEE, they can teach us about the life and times aboard during the British owned period, let's not allow ourselves to be left behind as the other ships advance toward complete restoration. The British are noted for their ability to re-create historical settings, I am sure that the new ship board settings will live up to the high standards that they have achieved on land. Their navy ships such as HMS WARRIOR are beautifully done, I am sure the same will be true of the merchant ships that are now in the process of being restored.

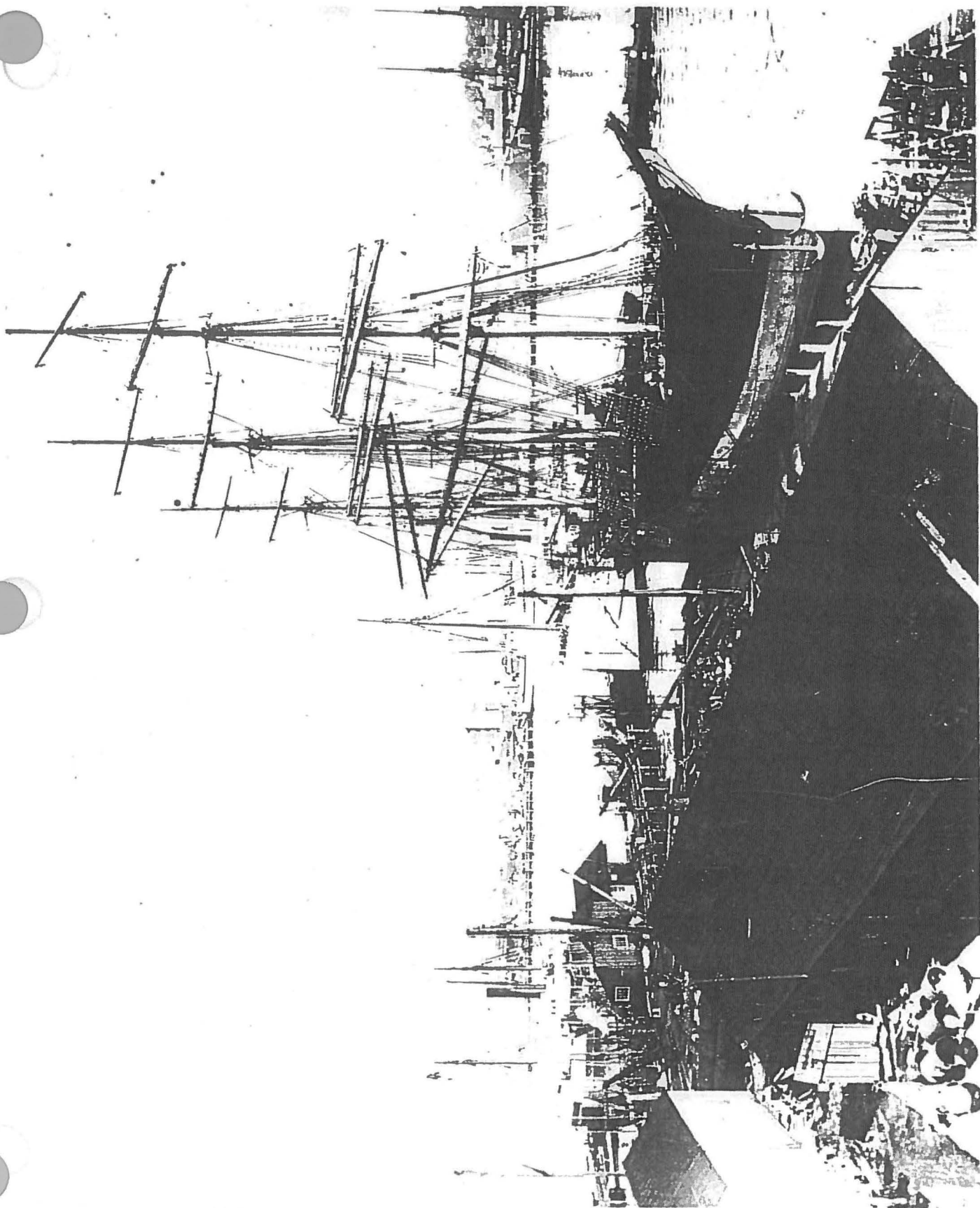
Poop Extension

The Alaska Packers Association completed one of the largest changes that ever occurred aboard in 1911 when, they sent the ship to United Engineering in Alameda, where they added a 62 foot long extension to the poop. There is a photo (B4.35,579n) which shows the work nearing completion. The new space was used for quarters for Cannery Officials and Fisherman who lived there during the annual voyages to and from Alaska.

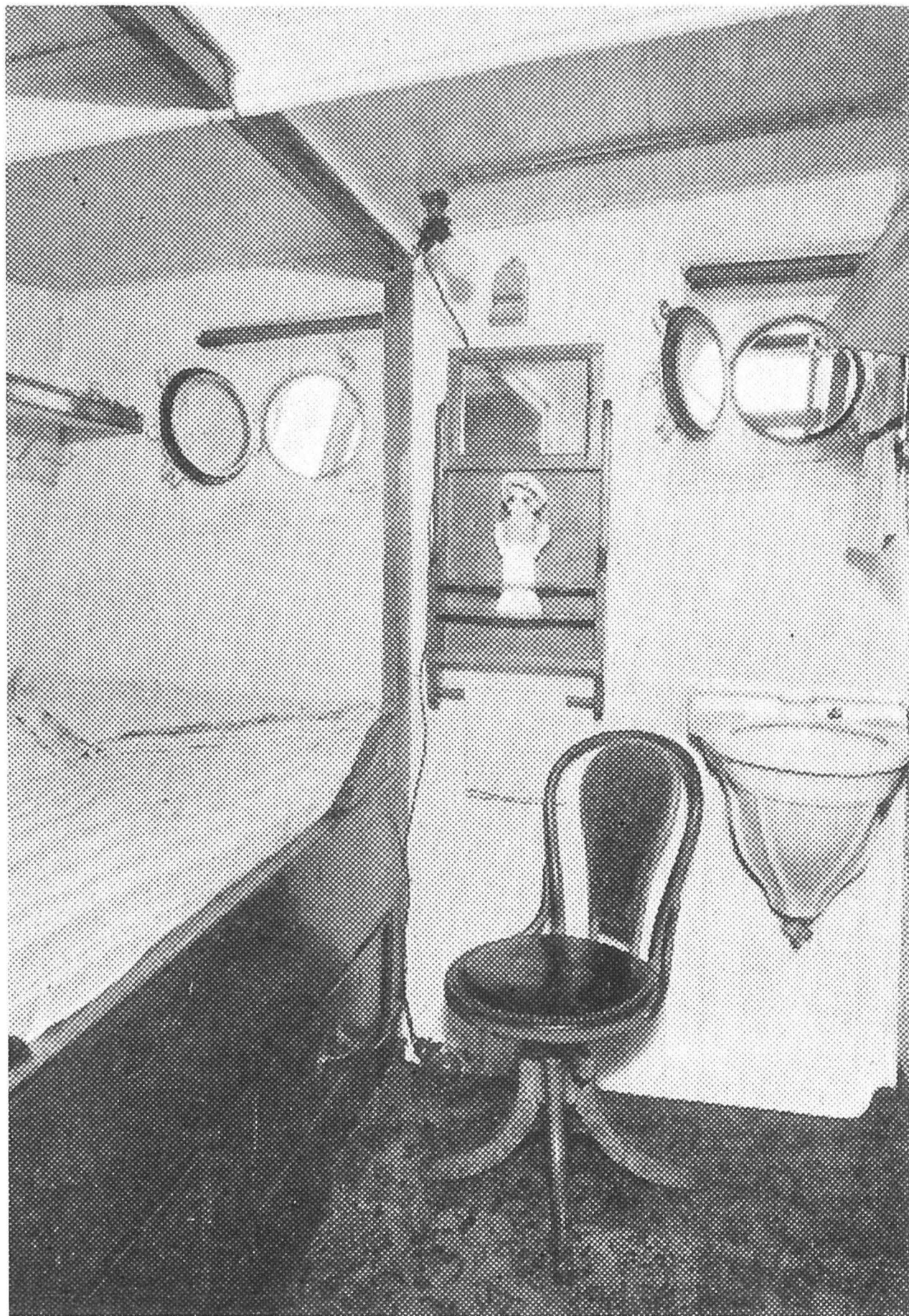
Due to the considerable loss of the historic fabric in the area and the current use of the "Shelter Deck" for social events, concerts and meetings it will not be possible to do much about furnishing the space.

One possible idea, is to furnish the First Mates room. It was moved forward when the extension was built to again occupy the forward corner on the port side. There is even a picture of the room as it looked in 1933, early in the Kissenger years. from this it would be possible to re-construct the layout. For further information on this area, see the Poop Appendix, at the end of this report.





B4.35,579n
Ships Star of Alaska
extending poop deck
United Engineering
Alameda, CA 1911



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National Historical Park

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VM 6.5 B31 R4 PAM P5.

SINGLE CABIN — PACIFIC QUEEN



Radio Room and Operator . . . Pacific Queen

Our advance agent is a man of many years' experience here and abroad. He will always be from ten days to two weeks ahead of the exhibition. He will make contracts and arrangements for dock space, radio broadcasts, newspaper publicity and advertising, news reels, and photographers. He will also make arrangements for a reception upon our arrival at each port for all city, marine, government, and dock officials, newspaper reporters, photographers, etc.

TO MAKE MONEY

As stated before, the paramount purpose of this enterprise is to make money. No passengers will be carried, and no freight. Every member of the organization will be active in the operation of the enterprise. We want useful, responsible people who can qualify for membership, which requires that you be of sound mind, white, physically fit, and financially able to buy a unit of shares that will entitle you to a part of the earnings, and ALL of the privileges of the ship—not for a day, not for a year, but for the life of the ship.

If you would care to join us in this business and amusement enterprise—make a tour of the world—visit strange lands and see strange things and people—take part in our fishing, hunting and trapping expeditions—make your home aboard the ship with all the comforts of your own home—assist in the management—for a trip, day, month,



Pacific

year, or the life of the ship, w
We will exchange references.
women, husbands, wives, sons
environment as that of our o

ACT NOW! Phone, w
that everything is just as repre

SOU

Pacific Queen Rooster 1933

In 1906 and early 1907. The ports may have been used for loading these cargoes.

Moving forward, another element that needs attention was the cargo battens that once existed along the inside of the hull. Held in place by steel brackets, these planks were about 2" x 10" and functioned to keep the cargoes, especially grain bags from rubbing up against the hull which could be dirty, rusty or wet. Apparently, they were still in place until the 1954/55 restoration. If some or all were replaced they could aid in supporting display panels or play an active part in re-creating a cargo display area for the grain cargoes that the ship was built to carry. She loaded California grain all four times she was in San Francisco: mostly wheat and some barley.

The Cannery Quarters

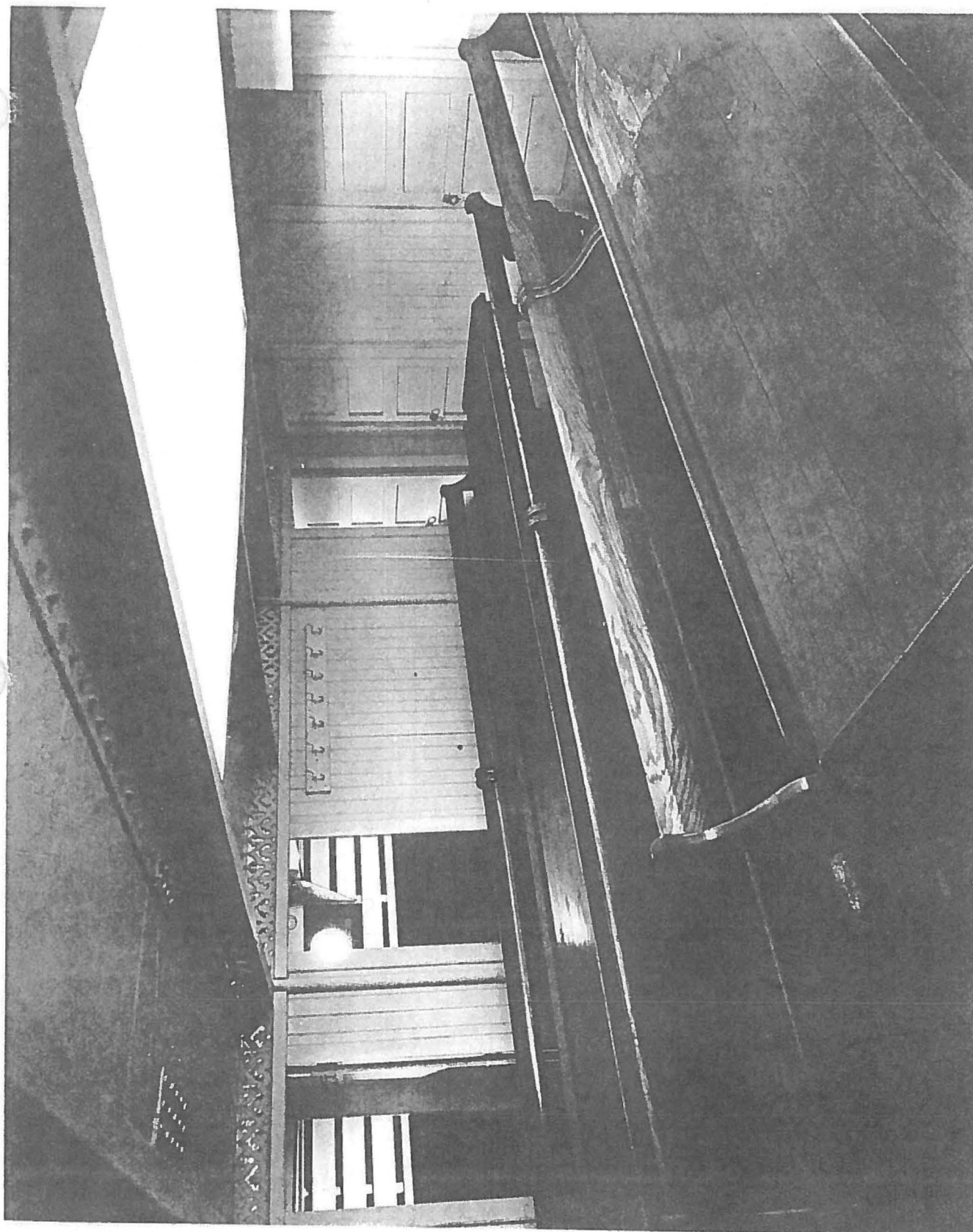
Starting with the first charter and later under the ownership of the Alaska Packer's Association, more and more bunks were added to the STAR OF ALASKA'S structure. By the 1920s, there were more than 100 people being carried in this part of the ship.

As was customary on land, the different Nationalities were housed in different parts of the ship. The forward end of the 'tween deck is where the cannery hands were housed. In the early years these immigrants were contract labor, who were often working on some of their first jobs on arrival in the United States.

on top of the chest of drawers seems to do a good job securing the above items, including the period light fixtures on the wall.

Poop Extension

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MARITIME MUSEUM OF SAN DIEGO : PHOTO H: P# N-22200 STAR OF SHETLAND "MESS DECK"

THIS COPY MADE 18 APR 1994 AT

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which it contains and restore the outline of the ship to its original appearance." History page 16.

The other surviving example of an Alaska Packer's owned square-rigger is the STAR OF INDIA now berthed in San Diego, as part of the Maritime Museum Association there.

The vessel was restored during the early 1960's with most of the work finished by the vessel's Centennial on November 17, 1963. The work was carried out by a mix of paid and volunteer workers. Among other projects, the Alaska Packers poop extension which was built about 1902 was removed. One of the seamen who had worked on the vessel, was Captain C. J. Carlson of San Francisco. He said, "I wish to commend you and your associates for the fine job you have done in restoring the old ship to its authentic appearance in rigging and hull...the removal of the continuation of the old poop forward to the mainmast (the fishermen's quarters) gave the ship the original clean deck lines from fore and aft and added to the authenticity of a ship of her age." Mains'l Haul, June 1965 page 1.

Although I wish some of the work that was done during that time was better documented, I agree with the removal of the poop because it is a less than elegant box added to the profile of the vessel. The same may be said about the BALCLUTHA, only more so because most of the rest of the ship has been restored to her British configuration. The shape of the ship from a distance

Appendix I

Shortening the Balclutha's Poop

There has been one major change to the ship that has not been addressed in this report and that is the 1911 extension of the poop installed by the Alaska Packers Association. The work was done by the United Engineering Works of San Francisco during the winter of 1911\12, in order to carry more fishermen on the annual voyages to the cannery at Chignik, Alaska.

While the idea of restoring this part of the ship has been talked about ever since the vessel was purchased in 1954, nothing concrete has been done to accomplish the project. In a paper given by William N. Mills to the Northern California section of the Society of Naval Architects & Marine Engineers he outlines the history of the ship and the work that had been done between July 1954 and July 1955 when the BALCLUTHA opened to the public.

He concludes with a look at some of the work that was still to be done, and says "Since the Balclutha originally did not carry the present "Alaska Packers" poop, we should like, at some future date, to remove this addition and the fisherman's cabins

would be improved, a historic anachronism would be removed and another section of the ship could be restored to the most important period of the ship's career -- the Deep Water Period.

Andy Nesdall, an amateur maritime historian, has said, "In order to really return her to the way she looked as a British Cape Horner, you should remove the extended poop. It spoils the whole look of the ship. BALCLUTHA'S silhouette is all wrong as long as it is allowed to remain there." (Oral history October 2, 1995)

Removing the approximately 80 feet of decking and side structure, would best be accomplished by cutting off the line of rivets that go through the sheer streak just above the deck. This would free the 1911 add on without removing any more of the original fabric of the ship. The bulwarks, stanchions and railings would have to be rebuilt back to the original height using as a prototype the original bulwarks forward of the area changed in 1911. The original railing would be loosened from across the top of the poop and re-installed along the original forward face of the deck. This is the area just forward of the mizzen fife rail.

Many changes would also be needed for the main mast. All of the standing and running rigging on the mast that leads from the upper deck would have to be restored to the lower bulwarks along the main deck. New chain plates would have to be installed, preferably using the holes in the sheer streak left over from the old chain plates. The main deck itself would need a complete

overhaul with new margin planking around the mizzen mast and new caulking in the area where the extension attached to the main deck. In fact, the entire main deck formerly covered by the extension will need to be re-caulked, maybe even replaced.

There was a small square airshaft, like the one in the deck house, going through the main deck just aft of the main mast fife rail. The structure was nicknamed the "lime juice hatch" because the Steward would go there to serve the citrus juice required on all British deepwater ships. It had a top like the one recently built on the deck house airshaft. There is one old photo that shows the structure, in the collection. The main mast fife rail had a curved section across the aft side, that too should be rebuilt for complete authenticity. In addition to belaying pins it also had the fresh water pump.

The mizzen hatch was also rebuilt in 1911 and some of the original parts are still present in the new hatch configuration. Like the fore hatch it used to go fore and aft, using the parts still available it could be rebuilt to reflect the fore hatch and the information in the Specifications of the ship. A highly visible structure such as this should be rebuilt using riveted construction throughout.

There was a set of boat skids between the main and mizzen masts which were used for carrying the two ship's boats presently missing from the ship. A gig and a cutter for the ship would have

to be reproduced. The gig was the captain's private water taxi, often rowed by a pair of the Apprentices. The cutter was the ship's workboat, used to move people or supplies from the shore or sometimes to visit other ships. Across the center of the skids was a wooden platform for the standard compass, it was also the place to put a couple of harness casks and the chicken coop was often carried under the structure. The correct location for all of this could be scaled off the Mohrmann painting of the ship. It gives a good view of the area. The actual shape of the skids could be modeled after the boat skids on the top of the deck house.

Other unknowns are the details about the front of the poop as originally built, the way the compass platform attached to the poop, the shape of the two compartments along the face of the poop-- the officer's head and the lamp room. It may be necessary to lift some of the planking in the area to see the details under the deck. In any case, the poorly made patch on the starboard side should be re-built to better follow the pattern of the original deck planks. A decision will have to be made about replacing the port lights across the break of the poop. They are currently missing from their original locations. The interior spaces that the ports open into have been mentioned earlier. There is a patch over a doorway from the Alaska Packers period which could be upgraded to an insert. The current arrangement while correcting a late period change is rather crudely welded without restoring the sill plate in the area.

Part II

It has also been proposed that this extended poop area be left as is, because the deck extension has been there so long it has taken on an historic character even though it is not original. The covered space created under it is put to good use hosting meetings, concerts and social functions. The open area has been used for exhibits and could well be used to show how people lived during the Alaska Packers voyages.

It seems necessary to point out that the current configuration of the space is very different than the way it appeared during the ship's working years.

Just before the ship was sold to the San Francisco Maritime Museum, Mrs Rose Kissinger was planning to open a restaurant in the space. The project only got as far as tearing down several of the partitions that were in the extended poop. There are two good plans of the space with all of the wood partitions in place, what they show is a series of rooms filled with two and three high bunk beds. If it is decided to leave the poop as is, then some or all of the walls and the bunks should be rebuilt. There are even some interior photos of the Alaska Packers fishermen's living quarters that show how to build the walls with decorative grill work over the top of each section. Doors can be had from our ship or replicas built. The remains of some of the bunks are still aboard, in the Chinese quarters. The walls that divide the rooms along the port side should also be rebuilt and the cabins for the

cannery and ships officers then re-installed and furnished. One of the photos taken in the mid 1930's shows the Chief Mates cabin most likely as it was during the APA period.

One interim idea is to mark the deck in some way to show the missing walls and to furnish one of the rooms along the port side to show the Alaska Packers period. Maybe small display items could go in one of the rooms and still leave the open space free of furnishings. This would allow it to continue to be used for social gatherings, but I will say again that these gatherings are not as important as telling the ship's own history.

Conclusion

The present state aboard Balclutha shows an important part of the ship in a way that it never existed during her working life. When the ship was British owned with the painted ports she did not have an extended poop and when the fishermen were living in the space it created, the whole rest of the ship was vastly different than the way it appears today. Although costly in time, money and labor the correct historical thing to do is to remove the extension as has been talked of doing ever since before the museum owned the ship in 1954. The Star of India restoration lead

APPENDIX 2

Specifications for the BALCLUTHA

This document has been mentioned and quoted numerous time in this report. Therefore it is here reproduced in full through the courtesy of the Yarmouth County Historical Society, Yarmouth, Nova Scotia, CANADA.

The second master of the Balclutha, Captain Joseph W Morrell made a copy of the original documents which were still aboard the ship when he took command in 1889. His account book also contains the records of the money that he used to run the ship during the time he was aboard. The Historic Documents Collection at the San Francisco Maritime National Historical Park has a complete xerox copy of the hand written document, filed as HDC

[Transcription from Joseph W Morrell Account Book
Owned by Yarmouth County Museum, 22 Collins Street
Yarmouth, Nova Scotia B5A 3C8 Tel.: (902) 742-5539]

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Specification

Steel ship "Balclutha"

Dimensions:	Length between perpendiculars	274 feet
	Breadth of beam extreme	38.6 "
	Depth of hold from ceiling to to under part of deck	22.8 "

General Description:-- The ship to be constructed with a full short poop with iron front. To have top-gallant forecastle fitted to an approved plan: To have Deckhouse of iron fore galley and crew placed between fore and main masts, to be fitted according to approved plan. To be rigged as a ship with double topsail yards. The vessel to be built to an approved model finished and equipped by the builders and to have a full E. I. Outfit as specified. The ship to be built to the satisfaction of the owners or any person they may appoint and to be built under a special survey of Lloyd's and Board of Trade, whose requirements shall be completed to the satisfaction of of their surveyors.

Iron and Steel Work:-- All as per Lloyds rule as per 100A1 class and where not specified by Lloyd's to be made ample in size. Stem to be of best forged scrap iron. to be rounded at front and to have two solid eyes forged on it for bobstays. Stern post of best forged scrap iron and to have four solid eyes forged in it for rudder. Water marks to be cut on both sides of stem & stern post. All butts and seams of plating to be planed.

Rudder:-- Frame to be all in one forging of best scrap iron Stock according to Lloyd's. Rudder case to be finished with collar underneath. Rudder to be fitted with spare tiller and releiving takles of chain. Cross head of rudder to be secured with two Keys.

Beams:-- In way of all hatches to be 1 in deeper and 1/16 thicker than the others; or, the ordinary beams with heavy angle iron.

Waterways:-- The main deck waterways to be gutter form 4 scuppers on each side one on each side of forecastle deck

Bulwarks:-- To be of 5/16" iron to be in one plate to rail about 5 ft. high. To be stayed from main deck to stringer with A formed stanchions of 1 4/8" and not more than 6ft apart with eye forged in each alternate stanchion and plan of securing to bulwarks and rail to be approved by Owners. Bulwark plates to have double rivited butts and single landings. To have three brass-pinned double-hinged ports of approved size on each side with as many small ports between large ones as wanted by Owners. All ports in way of hatches to be fitted with permanent iron rollers.

Rails:-- Main rail iron about 10 x 3 1/2 x 7/16" with 5" Greenheart for pin rail. Topgallant rail to be two half round iron mouldings as in "Sirenia".

Hold Stanchions:-- One to every beam in lower hold & tween deck.

Hatchways:-- To have three, sizes as may be arranged main hatch to have a moveable beam in each deck and three strong fore and aft pieces to support the hatches or as may be arranged, for hatches to lift off seperately covers to be of 3 inch yellow pine on main deck bolted together and well seasoned. Combings of hatches to be 1/2" iron to stand 20" above the deck at sides. Booby hatch to stand 24". all hatchways to be rounded at corners same as deck-house. Fore and main hatches to have a stout half-round on the top edge outside, and a flat bar inside for covers to rest on. After hatch to have angle iron outside and to be covered with a substantial booby-hatch cover of approved form with brass mounting and galvanized iron rods for handling and the hatch to be fitted with solid hatches below the booby Fore hatch to be fitted with a fore and after. All hatches to have all necessary bars cleats & battens (galva) and brass padlocks

Bulkhead:-- To have a water-tight bulk-head forward, riveted between double frames. Compartment forward of bulk-head to be fitted with pump sounding pipe and to work from main deck.

Deckhouse:- To be of iron length size and height to be agreed upon plating under galley to be "16" iron caulked and covered with 5" cement and fire-bricks. Floor to be covered with encaustic? tiles to approval. Arrangement of berths bunks and etc - to Owners approval and to be fitted with teak skylight in galley and boys' house.

Windlass: - Clarke Chapman Co's most approved pattern to work with double powered capstain on forecastle with a pair of approved chain stoppers. All deck beams under windlass and capstain and compressors to be lined with 1/2" iron plates and supported with stanchions as arranged.

Capstans: - In addition to capstan of forecastle-head to have one double purchase capstan on main deck aft. Both capstans to have brass covers and bars complete bars of capstain of forecastle head to be of elm and those for main deck capstan, teak and Brass capped, Suitable rack fitted for all bars.

Bitts: Four mooring bitts on main deck with heavy soles same thickness as main deck and let down on tops of stringer plate an screwed to same. Two strong pair of belts on poop deck and two on forecastle-head. Main deck bitts and all other to rest on teak chocks with heavy pitch-price chock underneath. Two pair of bitts on forecastle-head for shank-painters. Four galv_d iron bitts on main rail for making fast fore and main sheets and for fore and main braces if wished Ship to be double plated in wake of all hawse-pipes and hawse pipes to be single castings.

Hawsepipes: - Two in number to be formed of a solid casting to be sufficiently fitted and bolted to owners satisfaction to have two cast iron mooring pipes in the bulwarks abaft the foremast and two in front of poop also cast iron fair-leads where wished and to be double plated in way of all pipes.

Catheads: - To be of Greenheart with galv_d iron sheaves and fitted with fall, stoppers & etc complete.

Chain lockers: - Of iron as will be shown on plan of sufficient size to contain the cables with chain pipes and conductors from main deck also man-hole entrance complete with double covers one pair to fit chains and one pair to cover pipes when chains are unshackled.

Winches: Once double purchase winch at fore hatch and treble purchase winch at main hatch all to be fitted down on teak soles with iron plate riveted to the beams and fastened with strong screw bolts and nuts through chocks which are not to be less than 10" wide and 5" thick. One portable single powered winch fitted with barrel of large diameter.

Tanks: Two water-tanks of 5/16" iron fitted complete with pipes pumps & etc to contain 3000 gallons each and to have angle irons and crossbars as wished. To be thoroughly secured and sparred.

Plumber work: To have a pair of Wells & Wallace's combined main and bilge pumps 7" dia. Lead tail pipes and galvanized iron roses to bilge pumps. With large fly-wheel gearing for working pumps sounding pipes to be fitted with brass screws to attach to fire engine for draining ship out. Sounding pipe rods & etc complete. One spare spear with working bucket leathered complete. Two spare sets of brass upper and lower boxes. Head pump to be fixed at after end of Forecastlehead with suction-pipe and brass cock on ship's side to draw from before bulkhead and connected to galvanized iron wash-deck pipes carried along under main rail on one side To have brass coupling above main deck to connect suction pipe of fire engine. All sea-cocks to be fitted to shut and open from main deck. A pump to be fitted on fore peak sounding pipe with hand gear to ship on deck instead of sluice chamber. Two valve closet with suitable lead tanks for cabin and officers also one forward with enameled iron basin with connection to head pump for cleansing all soil pipes to be above main deck to have cast iron bends at ships sides with iron return valves. Bat room to be fitted with a plunge shower bath and wash basin to discharge into soil pipe in closet also to have closet in bathroom.

Plumber work (continued) Pantry to have brass basin, lead pipes and 30 gallons water tank complete and pantry table to be covered with zinc with discharge pipe for basin over-side. Lead scuppers to be fitted on Poop forecastle & houses where wished. Portable wash-hand basin with plug receiver and zinc jug for each state-room. Captain and officers rooms to have fixed wash-hand basins with receiver and zinc jugs companion stairs to be covered with lead and brass guards. All above to be arranged and fitted as in "SIRENIA".

Smithwork: All smithwork required for hull and spars to be complete in every detail. All light iron work about deck including hatch bars and sheaves through bulwarks to be galvanized. The vessel to be fitted with iron cleats and belaying-pins where required. To have two sets boat-davits. Awning stanchions where necessary and all the other smith work for rigging and decks complete. Topgallant outriggers of iron with bar across and topmast trusseltress to be supported with iron stays from cap eyes and eye-bolts where required for rigging purposes.

Ventilators: Two trucks to be arranged on deck plan and approved by owners and to fitted with dog kennel sky-lights or any cover approved by owners. Two bell mouthed ventilators forward, One bell mouthed ventilator for fore peak of approved size fitted with cast iron galv_d coverings and covers or as according to board of trade rules.

Cargo Ports: Two cargo ports to be fitted as in "SIRENIA".

Cementing: to be carefully done with best quality portland cement mixed with equal parts of fine fresh water and sand so as to cover rivet heads and upper lips of angle iron floors and to be carried up the bilges to the top of close ceiling ends of ship to be filled with broken bricks and cement as far up as wished. The fore peak to be cemented as far up as tween deck beams. All water tanks to be cemented as usual.

Floors to be cement washed with four coats of cement or painted in owners option. cement for washing floors and tanks to be mixed with sour porter Covering boards on top of close ceiling to be cemented.

Painting:--All iron and wood work to receive three coats of best paint to owners approval and all bright-work to receive three coats of varnish. Head an stern to be neatly painted and gilded and all beads in cabin ceiling to be gilded. Name on stern and bluff of bows to be in brass letters and gilded. Inside of all iron spars to be painted with three coats of red lead. The butts and landing of shell plating outside to be painted with best white - zinc after caulking.

Carving:-- To have woman figurehead as approved name to be carved and gilded on each side of teak steering gear.

Steering Gear:-- An approved screw principle with brass mounted teak steering wheel with brass nave with name engraved there on and gold name on wheel case.

Boats:-- To have four boats. two lifeboats, one cutter and one gig. all to be copper fastened with galv_d knees if wished. Teak gunwales. Galv_d iron stem. Keel plates ring-bolts & rowlocks all galvanized. Each boat to have full set of full sized ash oars and one spare oar for each boat also boat hooks and rudders Oars to be leathered. Cutter is to be rigged with jib and mainsail and life boat with lug sail. One life boat to be fitted with Buyont apparatus. Tanks to Board of Trade requirements and the gig to be fitted with Teak gratings teak backboard brass yoke and brass rowlocks. Boat davits to be fitted with galvanized chains and guys. Patent roller blocks and Manila falls to be rove complete.

Fife Rails:-- To be fitted around fore and main mast of teak with teak stanchions fitted into strong galv_d iron and to have a galv_d iron rod running under the stanchions for leading blocks or sheaves in the stanchions with brass caps at owners option. and the half rounds of fife rails to be covered to be covered with sheet brass.

Boat Beams:-- Four or five as may be required either of pitch-pine with teak mouldings or iron as may as may be arranged. to be supplied to satisfaction of owners.

Blocks:-- All blocks and block work to be of full size sheaves where not iron to be of ligumvitae. All cast iron sheaves to be galv_d with patent rollers. Blocks to be iron strapped inside or outside where wished. All brace blocks to be fitted with patent roller bushes also. davits clewline & clew garnet blocks to be fitted with the same patent. All purchase blocks to have gun metal bushes and steel pins. all fitted in topgallant bulwark for leading braces to be the same patent as brace blocks. Block list to be supplied for approval.

Ladders Accommodation ladder fitted to answer either side teak with galv_d iron davit blocks & chains teak foot-bard and platform. Jacob's ladder of sufficient length to reach the water when the ship is light. One hold ladder forepeak ladder, storeroom ladder after-hatch ladder Two teak ladders with galv_d iron hand-rails and treads to ?? Iron stanchions at each hatch to form ladders. Two teak gangway ladders. One or two teak ladders with brass trades and teak or brass handrails as may be arranged for poop deck. One iron ladder on deckhouse. Platform to be fitted from poop to bridge with galv_d iron rails.

Decks:-- Main deck to be of pitch pine. 5" by 4" reasonably free from defects of any kind fastened to deck beams with galvavized screw bolts and nuts, Teak margin plank next to waterways 10" broad from poop right forward. Decks from fore hatch forward width of windlass under capstans to be of pitch pine 1/2" thicker. At sides of houses, hatchway, ventilators

and iron front of poop to be of teak. All planks to be juggled with margin planks. No pointed butts to be allowed on main or poop decks Tween deck beams ties and stringers to be covered with elm 1 1/2" thick edges and corners to be champered. poop deck to be of yellow pine 5" x 3" Forecastle deck to be of 5" x 3" pitch pine with teak waterways around sides. Deckhouse to be laid on top with 5" x 3" pitch pine Pitch pine waterways all around. Teak faced with mouldings. White pine 2 1/2" thick to be laid in the fore peak for rough stores. Oakum to be wound around the head of each bolt and coated with white lead Main Poop and Forecastle decks All deck dowels to be of teak. Decks to be cut and stacked as soon as possible after contract is signed.

Ceiling:-- In hold to be of 2 1/2" pitch pine in flat of bottom and Quebec red pine in bildges, above to be spanned with 6" x 2" White Pine spaced 8" apart in cleats.

Masts & Spars:-- To be of steel, Lower and Topmasts to be in one length. Lower, Lower Topsail, Upper Topsail, on fore and main. Lower and lower topsail on mizzen mast to be of steel all other spars of red or pitch pine All scantlings and rivetings to be in accordance with Lloyd's rules. Masts to be doubled at partners yards to be doubled at slings. All yards to be fitted with jackstays and eyes. Bowsprit and jib-boom all in one length of steel. Two iron rod bobstays Bowsprit to be efficiently connected to cutwater and plate at night-heads all outside of Forecastle. Sketch of this given for approval.

Rigging:-- Standing rigging of best charcoal galv_d wire rope served to lower caps. Wire foot ropes on all yards. All rigging to be set up with double worm screws. Bowsprit to have two iron bobstays. running gear to be of best manilla. Rigging chains to be of best crane quality Brace runners of flexible wire with chain pendants to have the usual number of shrouds and back stays for each mast all shrouds and stays to be fitted with brass caps.

Side Screens:-- To be constructed of wood.

Poop & Cabins etc To be of such dimensions as may be arranged. Front of iron and to have galv_d iron stanchions with two rods all around sides and stern and in front where necessary with teak wash plank at bottom and teak rail on top all around. Interior arrangements to be shown on plan. Saloon to be finished in oak and maple or teak and maple as owners may select. To have side board with marble top carved and gilded mirror with place for cabin time-piece Table settees swing tray table guards and Captains revolving chair Saloon to have carved ornamental grill cornice and trusses. Captain and officers rooms and staterooms to be fitted with sleeping berths, wash basins, toilet racks mirrors & brass hooks Mates room to have desk fitted. Captains berth to be fitted with drawers, table, chronometer stand, bookcase brass rod and curtains for door deadlight berth and armchair Staterooms and Captains room to be carpeted. Officers rooms and lobby to be covered with best quality linoleum. Saloon to be carpeted with Brussels five frame carpet of approved pattern, State and captains room to be supplied with same quality of carpet. Mat for fireplace and Brussels mu? for saloon to be supplied. Captains room to be fitted with Chubb lock and spare Key. Pantry to be fitted complete to inspectors satisfaction all locks and Keys to be of brass of the best and strongest make. Six camp stools to be supplied. to have handsome skylight of Teak Entrance to cabins to be from Chart house on Poop deck.

Forecastle:-- To be of such dimensions as may be arranged to have galv_d iron stanchions with two rods all ?ready? made to unship in way of anchors and fitted with leads for jib sheets as arranged Also bitts and teak rail for making fast jib downhauls and fitted with all necessary half rounds for leading and hauling lines to main deck underneath accomodations for crew and W C on one side.

Bells:-- Brass bells of suitable size in ornmental cast iron stand on Forecastle head and Brass binnacle bell on brass stand on poop to work on swivel Ships name to be engraved on both bells.

Anchors & Chains:-- According to rules. Anchors to be Roger's old patent. 90 fathoms of Mooring chain to be supplied to be made by N Hingly & Son.

Sidelights:-- To be of brass 9" in poop one in each stateroom as wished and one in W C. and two if required in lamp room in front of poop. Sidelights in Deckhouse to be 9" and in forecastle 7" spaced as required. As many as wished in front of poop.

Sundries:-- Awning stanchions and ridge ropes to be fitted as in "Sirenia" Carpenter shop to be fitted with bench shelves and lockers iron bench vice & anvil Sheer-strake doubled above stringer between Poop and forecastle The compasses to be adjusted at the expense of the builders the Owners taking the ship to Garloch for this purpose Sailroom in poop to be fitted with all necessary rollers gratings galv_d bars etc. Ship to be fitted with fish pendant for anchors, anything specified may be changed for its equilavent value in something else.

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Outfit

Sails & Canvas to be of Gourock, Isle of Man, Edinburgh Roperce(?) Coy(?) or Newark Co. Extra quality except studding sails, awnings, covers, ect.- which are to be of bleached canvas. Sails to be fitted with best bolt rope galv_d hanks and spectacle clews, leather ect. complete.

1 Jib Topsail	No 5	1 Crossjack	No 3
2 " Outer	" 3	1 Spanker	" 2
2 " Inner	" 3	1 Storm Spanker	" 1
2 Fore Topmast Staysail	No 1	1 Mizzen Topsail Lower	" 2
2 " Courses	" 1	1 " " Upper	" 2
2 " Topsail Lower	" 1	1 " Topgallant sail	" 5
2 " " Upper	" 1	1 " Royal	" 6
2 " Topgallantsail	" 3	1 " Staysail	" 1
1 " Royal	" 5	1 " Topmast staysail	" 4
2 Main Courses	No 2	1 " Topgallant	" 6
1 " Topsail Lower	" 1	1 " Lower Topsail	" 1
1 " " Upper	" 1	1 " Upper Topsail	" 2
1 " Topgallantsail	" 3	1 " Topgallantsail	" 3
1 " Royal	" 5	1 " Royal	" 4
1 " Topmast staysail	" 3	1 Mizzen Lower Topsail	" 1
1 " Topgallant "	" 5	" " Upper "	" 2
1 " Royal "	" 6		

Awning from Mainmast aft and formast forward

3 Windsails, 2 Tarpauling Covers for each hatch. 1 cover for each boat. No 5 sail for one boat. Covers: One each for Wheel, Bell, Binnacle, Cabin skylight, and booby hatch. Double mastcoats for each mast.

Hawsers: 40 fathoms 3-1/2 Steel hawser with 20 faths. 11" Manilla rope, with thimble and shackle complete. 45 faths. 3-1/2" steel Hawser with 15 faths. 11" Manilla rope same as above. Both the foregoing hawsers with single powered reels. 90 fathoms 6-1/2" Manilla warp. 2 hauling lines 5-1/2" 120 faths. long.

100 fathoms 4-1/2" Manilla	2 cwt Hamberline
	toasting(?) Marline
100 " 4" "	1 coil 2-3/4" Manilla
120 " 3-1/2" "	1 " 2-1/2" "
120 " 3-1/4" "	1 " 2-1/4" "
240 " 3" "	1 cwt. fine spunyarn
40 " 5" Boltrope	40 fathoms 3-1/2" Boltrope
40 " 4" "	40 " 3" "
2 coils 18 thread Ratline	40 " 2-3/4" "
2 " 21 " "	40 " 2-1/2" "
2 cwt. spunyarn	4 life bouys & 4 cork fenders

Sailmaker's stores: 8 bolts bleached canvas, 1 each of Nos. 1, 4, 5&6.
 2 each of Nos. 2 & 3. 78 lbs of seaming twine. 28 lbs roping twine.
 4 doz. sail needles. 6 palms. 6 sailhooks. 3 bolts 3 Navy extra, 126
 yards. 2 bolts 30" Tarpauling Hemp 90 yards. 20 yards duck.

Carpenter & Bos'un's stores:	4 Squeegee, 18 paint & 6 round brushes
1 Hand copper pump	24 Coir brooms
1 Pair Rigging screws	4 Joiner's scrapers
2 sounding rods	2 Mops and handles
1 spare T.G.mast and yard, Red Pine	6 Ballast shovels, 4 coal shovels
1 spare topmast, red or pitch pine	2 teak Hen-coops, 1 teak meat safe
1 spare topsail yard	200 Teak Deck Dowels
3 Norway spars	1/2 hide pump leather
6 Hickory handspikes	1 hide service leather
2 log ships	2 doz fish hooks
1 pitchpot and ladle	1 " Regulation Blue lights
1 Shark hook	1 " " Rockets
2 doz gal_d connecting shackles	4 fishing lines, 1 grindstone
3 doz Bow shackles	4 long tar brushes, 2 short do.
3 " Washers	6 paint scrubbers, 1 cwt. Oakum
1 spare mast fid	12 chain hooks
2 axes	12 sing. spare blocks 8" to 12"
1 adze, 1 saw, 1 maul	12 Dou. " " " " "
1 set rivet hammers	2 cat blocks
6 wood fenders with lanyards	2 top blocks of approved size
2 loglines & 1 reel	3 snatch blocks 30 ft(?) Hardwood
1 Walkers Pat. deep sea lead	24 scrapers
and reel. 200 faths. line	6 slices for scraping iron
2 hand leads & lines	6 Growlare(?)/pucture(?) gin(?)&chains
1 Portable forge	4 boat hooks
1/2 cwt. rivets, asstd	18 marline spikes steel asstd(?)
1/2 cwt. nails, asstd	4 serving boards, 4 serving mallets
1 Ratchet brace with 6 drills	1 barrell cement, 4 greenheart battens
3 chisels, 3 cope chisels	18" Brass anchor lamp
1 screw with patent spanner	1 set shoe brushes, Laps(?) wick(?)
3 Chain purchase slings	1 pr. sidelight glasses
2 pr. can hooks	3 doz. spare Greenheart belaying pins
1 pr. Grains, 1 Harpoon	1/2 doz. Galv d iron belaying pins
2 spare shackles for each cable	2 small tail blocks
3 doz. asstd forelocks	1/2 doz. Lignumvitae fairleads
24 hooks & thimbles, asstd.	2 doz. sheets sandpaper
12 clip hooks	2 " sheets Emory cloth
6 Deck scrubbers	6 " brass screws

2 lbs. copper nails	12 iron slices
2 " " tacks	1 gross 1/4" washers
2 deep sea leads 28 to 32 lbs	2 rods 1/4" iron
1 gross Bryant & Mays matches	1 tin tea pot
12 mast knives	1 " coffee pot
1/2 coil seizing wire	1 B.M. Tureen
2 lbs black lead	3 cwt oakum
1 Paring(?) Knife	30 lbs galvd hoop irons
6 paint pots	2 " rivets
1 Teak table block	1 6 gallon oval pot
2 chain nippers	1 galley fork
2 starch(?) powder	3 galvd buckets
1 iron spunyarn winch	2 flour tins, 2 bread pans
1 pr. smith's tongs	1 bottle spirits of salt
1 soldering iron, 2 lbs solder	2 doz. lamp glasses
3 rods of iron, selected	1 1/2 gallon copper measure
6 spare eyebolts, 1 steel pen	1 tin collander, 1 flour sieve
6 Up and down fenders	2 large anchor shackles
6 yds. 1/2 inch india rubber	1 Harpoon & Grains staff
2 yds. red, white, blue and yellow bunting	1 filter
3 bottles furniture polish	30 lbs. service leather
3 packages " "	1 2-handed cross cut saw
3 " " plate powder	

Cooperage: 4 oval breakers for boats with galvd hoops
 1 doz. Brass Hooped teak buckets. 1 doz. galvd hoop oak buckets.
 2 Harness casks, Brass mounted. 1 doz. mess kids, galvd hoops. 1 large funnel with copper nozzle. 1 rum cask, 15 galls., galvd hoops.
 4 bread barges, four boat bailers. 1 gall. measure wood with galvd hoops.

Lamps: 3 Forecastle lamps. 1 Galley lantern. 1 set sidelights to burn paraffin or oil, to be up to Board of Trade requirements.
 1 spare set galv_d sidelights. 1 Dioptic(?) Brass anchor lamp. 1 flash lamp. 4 deck lanterns, all galvd. 1 cabin lamp to be approved by owners. Brass lamps to each stateroom, Officers rooms, Pantry, Bath room and Captain's room to be approved by owners. 1 lantern for boy's house. 1 Dark lantern. 1 set disabled signals, night and day. Lamps for petty officers rooms. 1 pr. lamp sissors.

Opticians stores: 1 Whyte's improved Standard compass and Binnacle with Azimoth. 1 steering compass 10" card, double needles with brass binnacle top and lamps complete on handsome stand. 1 spare spirit compass in box to fit binnacle. 1 small tell-tale compass. 2 spare compass cards marked with degrees. 1 Barometer and Synipisometer(?) combined. 1 pr. night glasses. 1 telescope. 1 half hour glass. 1 log slate. 2 log books. 4 log glasses. 1 Brass speaking trumpet. 1 Aneriod(?) for Captain's room. 1 mechanical fog horn to approval 1 Copper Thermometer. 1 American (?) time piece for Captain(?). 1 handsome inkstand for saloon, with two penholders. 1 Books of lights. 1 Mate's reciept book. 1 German silver Salinometer in Mahogany case. 1 Expenditure of Provisions book. 1 Brown tide table. 1 Scotts telegraph code book. 1 Inventory of Stores book. 1 Patent log line.

Flags: 1 Full sized ensign. 1 small ensign. 1 Union Jack. 2 house flags. 1 Burgee, approved size. 1 set of signals Commercial & Marryat's(?), codlined (?) and hooks, halyards to be fitted to all masts and all gear complete. 1 teak signal chest.

Cabin Stores: Plates and crockery, glass and cutlery all to be of best quality, with ship's name and flag. 1 teak medicine chest with ship's name on brass plate, filled complete for 40 men for 12 months, 1 Register box with lock & ship's name. 2 cabin sweeping brushes, long and short. 4 zinc tanks in Pantry for Pease ect. 1 iron tea kettle. 1 copper kettle. 1 BM tea pot. 1 BM coffee pot. 2 tea canisters for holding(?) 20 lb. 2 coffee canisters, each 40 lbs. 1 BM tureen and ladle. 1 pr. flour scales. 1 pr. steel(?) yards. 1 set weights & scales complete. 2 coffee mills. 1 spice box. 2 cork screws. 1 hand bell. 1 candle box. 1 Flour dredger. 1 dust pan. 1 fancy bread basket. 1 set pewter measures (say 6.) 1 Plate Basket. 1 forecastle stove and funnel. 1 oil cloth cover for cabin table. 1 cloth of tapestry cover also. 1 gun complete with teak carriage to pass Board of Trade. 24 round ammunition 24 shots. 1 copper magazine. 2 revolvers. 6 hand cuffs. 50 cartridges. 1 box caps. 2 lbs. powder. 2 scouring cabin brushes. 1 plate brush. 1 cloth brush. 14 lbs. waste. 1 large knife(?) boat(?) 4 Brass spittoons. 12 Bath bricks. 6 bottles blacking. 1 Rat trap. 1 Dinner bell. 1 spring bell for table. 6 oil feeders, one of them with spring. 2 spirit taps. 1 Market basket.

1 Cheese tray. 3 Waiters. 1 Dust Pan. 2 Tea(?) funnels. 1 common cruet stand for daily use. 6 yrd scouring cloth. 4 sheets yellow metal, 18 to 22 oz.. 1 doz. table knives, ivory handle. 1 doz. knives horn handles. 2 carving knives & Forks, ivory handle. 1 steel, 1 ivory handle. 1 dz. tea spoons EP. [Electro-Plated?] 1 dz. Nickle forks large. 1 dz. small knives. 1/2 dz. egg spoons EP. 1 Mustard spoon EP. 2 salt spoons EP. 1 doz. table forks EP. 1 doz. desert forks EP. 1 cruet stand with good cut bottles EP. 4 dish covers MB. 1 Black Jack. 2 Brass candlesticks. 6 vegetable dishes. 3 dz. plates asstd. 1 dz. mugs. 1 dz. dishes asstd. 1 dz. Egg cups. 2 butter boats. 2 Glass salts. 2 butter pots. 1 doz. soup basins. 2 sugar basins. 1 Sugar glass. 4 water jugs for cabin. 1 doz. wine glasses, cut. 2 doz. cups and saucers. 1/2 doz. comm. tumblers, cut. 4 Decanters. 12 meat plates. 1 doz. tumblers cut. 4 pie(?) dishes 1 pudding mould. 1 Galvd iron boiler. 1 copper boiler & steamer. 2 tinned oval pots. 4 tinned saucepans. 2 Frying pans. 1 5ft. cooking range to be supplied with all usual cooking utensils & fittings as follows. Oven for roasting and baking bread, fire-irons ect(?) complete and fitted with a small condenser. 3 enamel pie dishes. 1 fish pan. 1 fish slice(?). 1 Gridiron. 1 Pepper box. 1 Grater. 1 Cleaver. 1 set skewers. 1 Cook's Knife. 1 meat saw. 1 cook's ladle. 1 Cook's axe. 1 Cook's spoon. 1 Cook's tormeter(?). 1 mincing Knife.

Stationary: 1 wages book for 50 men. 2 cargo books. 2 pint bottles ink. 2 boxes steel pens. 2 quires(?) note paper. 2 quires(?) foolscap. 2 quires(?) blotting paper. 1 dz lead pen.(?). 1 dz. "Q" (?) Pass books. 1 dz slate pencils. 1 piece India rubber. 1 Disbursement book. 1 Nautical Almanac.

Paints & Oils: 30 galls colza oil. 70 galls raw linseed oil. 40 Boiled linseed oil. 10 galls copal varnish. 10 galls turpentine. 2 galls sperm oil. 2 bladders putty. 15 cwt paint asstd. 1 cask pitch. 1 cask rosin. 1 bbl. Stockholm tar. 60 galls boiled Linseed oil. 40 galls kerosene oil. 2 bbls paint(?) oil, about 80 galls. 20 galls black varnish, 1/4 gall Brussels. 2 bbls Swedish pitch, about 8 cwt. 2 bbls Swedish tar. 10 lbs umber. 6 cwt stone color light. 6 cwt red lead. 4 cwt. black paint. 1 cwt whiting. 4 cwt tallow. 10 lbs Italian yellow.

Fire Engine: Of approved make & size with 90 ft. 2" leather hose with brass couplings. Copper directer, pair of keys, ect. complete with 30 ft. 2-3/4" suction hose.

Tanks: 1 15 gallon tank in Pantry, galvd. iron
 1 15 " " " Boy's House " "
 1 15 " " " for Crew " "

Tanks to contain all Oils, Turps & Varnish supplied as per inventory with taps ect. complete and fitted in lockers as may be arranged.

5 bread tanks to hold 10 cwt each.

1 small tank for cabin bread in storeroom.

Napery: 1 doz table cloths. 1 doz Cabin towels. 1 doz steward's Towels. 1 doz cook's towels. 1 doz glass towels. 1 doz scourers towels. All napery to be stamped with ship's name.

Blocks: All Brass patent sheaves 1- 10 x 1-1/2, 1- 9-1/4 x 1-3/8, 4- 8 x 1-5/16, 4- 7 x 1-1/4, 2- 5 x 1-1/16

Common bush sheaves 1- 10 x 1-1/2, 1- 9-1/4 x 1-3/8, 4- 8 x 1-5/8, 4- 7 x 1-1/4, 2- 5 x 1-1/16.

Sundries: 10 tons slabs & 15 tons dunnage wood.

It is understood that everything that may be twice enumerated is only to be supplied singly. No extras to be supplied without written order from Owner or person superintending the ship. Vessel to be built and equipped in every respect similar to the "Sirenia" with additional items of outfit as per list handed builders by owners and which are embodied in the foregoing specification.

[Transcribed at San Francisco Maritime National Historical Park by Ted Miles and Stephen Canright April 30, 1993]

Brass Aboard the BALCLUTHA

Appendix 3

While studying the historic photos of the ship and similar British built square-riggers I have noted that quite a lot of the bronze and brass fittings are missing from the BALCLUTHA. The reason that "yellow metal" was used for many of the fittings was that it was more durable than ferrous metals, it was non-magnetic and when polished the color was a pleasing element aboard these highly decorated Victorian structures.

The Connell Specifications referred to throughout this report mention bronze fittings time and time again. Several of these are worth a specific mention. There were two bells used aboard: a large 12" high by 15" diameter one on the foc's'le head and a smaller 6" or 8" watch bell placed on the wheel box. Today, the large bell remains in place, but is simply hung by a large bolt from the rail. Historically, the bells aboard these vessels hung in a fancy bronze or cast iron frame, which was often made of two Dolphins standing on their tails. The amount of money spent on the bells, L120 in 1886 indicates that this type of fancy cast iron frame was used here. There are several such bell frames in the Park collection. For some reason the 1887 picture of the ship does not show such a bell frame.

The smaller watch bell is long gone from the ship, but we do have a nice historic photo of the bell and its frame in place on top of the wheel box. It was removed in the late 1930s, after that it no longer shows in pictures of the ship. The name of the ship was engraved into both of the bells used aboard.

Little noticed but important structures, the port lights used throughout the ship. They came in two types: those that are closed and those that open. The first type can be seen in the skylights and the second in any of the living spaces. There are three sizes used aboard and they match the ones called for in the 1886 specifications.

The Park is extremely lucky that only one of the deckhouse opening port lights is missing and the moveable part of a second port is lacking. Efforts are under way to replace these missing items. The forward end of the poop did not fare as well; six opening ports are missing with the opening for one of them plated over in steel. The dogs that secure the ports are mostly missing.

The compasses used aboard were placed in three mostly bronze structures. The steering compass binnacle partly exists in that the cast base consisting of three Dolphins standing on their tails has survived. The upper curved structure, which contains the actual

compass bowl, is a museum restoration. Long missing its curved top, it is now displayed with a World War II period compass that does not fit very well. A long search to find a replacement for the missing top has not been rewarded.

The third compass was a tell-tale compass, was an ingenious fitting placed over the Captain's bunk, which was designed to be read upside down, allowing him to check the course being steered without getting out of bed. It is long gone from the ship. Modern ones are not very different from the 19th century versions and could be installed.

Some of the smaller fittings were removed over the years and have been placed in the Park's collection area. There is a set of bronze stair treads that used to be on the stairs that go up into the Chart House. They should be returned to their historic location. The cabins aft need brass rails over the bunks, these were fitted with curtains so daylight sleeping was possible. Details can be seen in period photographs.

The poop door needs a large bronze lock set to match the others used aboard. The bronze cover is missing from the capstan on the foc's'le head.

The three fife rails are missing some of their bronze molding strips and some of the bronze molding around the sheave holes in the stanchions are also gone.

These small items were not large in themselves, but taken as a whole they give a dramatic feel to the ship.

Revised July 1999, July 2000

A Conversation with Andy Nesdall

October 2, 1995

Ted Miles- I am here today for a talk with Andy about the Cape Horn ship BALCLUTHA and others of her type. Andy has had a life long interest in commercial sail, especially the iron and steel vessels built in the British Isles. He is also very knowledgeable about the American Down-easters. In years past he has given the museum copies of ship plans to be used in BALCLUTHA'S restoration process.

He has known Karl Kortum since 1955 and has been able to assist the San Francisco Maritime Museum, later the Maritime Historical Park, on many occasions. Most notable is a long running interest in the Hester Collection, an important group of sailing ship pictures from Puget Sound around 1900.

Ted- Have you ever seen any plans from the Connell shipyard?

Andy- I've never seen any. Have you asked David MacGregor about plans?

Ted- Yes in the past, maybe it is time to try him again.

Andy- Greenwich has Barclay, Curle and a large Alexander Stephens collection.

Ted- Their largest holding is the Denny collection, but that yard did not built sailing vessels as far as I know. Do you know anything about what they have at Liverpool?

Andy- I visited there in 1987 and they have some plans, it is worth checking.

Ted- As far as BALCLUTHA goes, is the poop accommodation typically British?

Andy- No, the Masters quarters were usually on the starboard side aft. The quarters would have been narrower in that location.

Andy- The aft wall of the bath room has been moved, because it

has now been built across one of the grills in the paneled bulkhead. They would not have done that in original construction.

If the bath and pantry had been moved the original locations would be obvious in the t'ween decks, although the lead bend connection to the outside discharge would have been removed. Of course you can see the pantry waste outlet from the pier if it still exists.

Andy- The pantry has also been moved, by the Alaska Packers Association, it does not agree with other British layouts that I have seen in plans. The location of the pantry would be indicated by the hole for a waste pipe. Mostly, the pantry was on the port side, forward of the saloon, although in the BALCLUTHA it seems that it was aft of the hallway, on the port side. Here there is not enough space for the two mates cabins and a pantry.

Ted- My theory is that the pantry was aft of the hallway and it was placed so that it could utilize the hatch in the deck that still exists.

Andy- Was there a ladder in the area or indications for one? Maybe you should contact Jurgen Meyer to see if there is any information about the German sister ships. It is too bad that Karl did not do that years ago when there was someone still alive that had sailed in one of those ships.

Ted- Steve Canright sent a series of letters to the various museums a few years ago seeking photos of any of that group of ships. He got back a couple of nice photographs of paintings of them. I should show you them to you at some point.

Ted- There used to be a bulkhead on the starboard side that no longer exists. Could this room have been the slop chest?

Andy- None of the plans I've seen show a slop chest room. Most likely the slops were kept in the storage aft of the saloon.

Andy- It was opened once a week in the steamers that I was in, before the War. I was in two steamers and a motor ship and have only a dim memory of buying something in the slop chest, since I came well provided and did not smoke. I think the Steward presided, maybe in his own room or another.

I keep coming back to the lack of ventilation grills around the top of the saloon walls. Maybe the Alaska Packers dropped the ceiling and insulated it because of the cold weather. I would like to get a profile of the whole area and see how it lines up.

The wall on the port side does not lead to anything, no place for the air to go after going through the wood scroll vents. I'd appreciate a section with the dimensions given. Aren't there two bulkheads

Ted- I think the APA put those in about 1911 when they extended the poop, they are a close match for what is out there and they do exist as ventilators out there.

Ted- The doors at the aft ends of the saloon have their vents blocked off with wooden planks. They would have been open during the British years wouldn't they?

Andy- Yes, someone closed them in during cold weather, maybe even modern times, there is no way to tell how long ago it was done.

Ted- Looking at the plan of the ACINOUS, (in the BALCLUTHA scrapbook) do you think that she was fairly typical?

Andy- She was a sister to several ships, CITY OF BENARES, CITY OF MADRAS, ANAURAS, maybe the KELVINGROVE.

I have a nice picture of the ALCINOUS, that I think I got from Morton Waters, here in San Francisco.

Ted-Any general comments?

Andy- A very short poop, she had a pantry abreast of the saloon, The second and third Mates were on the port side of the alleyway. And midships in the poop was the mess room. Note the Masters cabin aft and a sail room at the starboard forward side of the poop.

Ted- Here is one of Karl's letters to G.V. Munroe that I think is very important.

Andy- Reading the Munroe letter from May 15, 1957. His reference to the Rankin memory of the Masters cabin being aft in 1904/5 indicates that the Master's sleeping cabin was not always in the present location. Karl indicates in the letter that he believes the pantry in the present position is original.

Ted- I wonder if the arrangement of the plumbing as described in the Specifications could be used to find the Pantry.

Andy- The clue to the pantry location is if there is a waste pipe on the port side aft.

Andy- Have you ever searched to see if any plans exist for the HAWAIIAN ISLES in any of her various guises? I wonder if the Swedes have anything that might help you. That is assuming that the APA did not change things around.

Andy- Looking at the Saloon Specifications, the Saloon has, "grill cornice and trusses" Probably means that there were vents at the top of the wall. Every single one of the Hester pictures I have

ever seen and lots of others show those top grills.

Andy- I would like to go back aboard and look at some more of these things first hand.

Ted- Sure Let's do that.

Part II

We went over to the ship and started our tour at the bow and worked our way aft. This was Andy's the third time aboard this visit.

Ted- Standing in the foc's'le. Norman Brouwer found this picture in an antique store in New York and we have used it to build these bunks.

Andy- They look pretty good to me, but they shouldn't be varnished. In the NORDEN we had wood bunks and they had paint on them. The SEVEN SEAS and the steamers I was in we had steel pipe frames.

Andy- Standing in the Galley. A dish rack? Sailors ate off pannickins, I wonder if the Steward would have carried dishes from the pantry all the way forward and store them in the Galley, rather than in the Pantry?

The dishes belong aft, in the pantry. The Steward or the Cook carried the food aft in a basket, probably kept hot in casseroles or other heated covered containers. When the TUSITALA was sold (prematurely) for scrap in 1938, I was allowed to take one of the large metal pots, which I gave to a friend on City Island, Gordon MacRae, who was brother-in-law of Skippy Lane, whom I think you know. Otherwise, how about hanging some pots and pans in here?

Ted- I explained that the Environmental Living Program is using the space at the present time. It usually has some cooking items on display. I wonder where I can get a pannikin to copy?

Andy- Before we went overseas in the Air Force, we were issued mess kits, and the only time I used mine was on a troop train. I remember it passing down the chow line, in a baggage car, the sliced peaches dessert got slopped into the small aluminum container along with the meat and potatoes. We must have had a cup, but I don't remember it. A sailor's pannickin was unlikely to have been divided as ours was.

Andy- Moving out on deck, Note the fairlead in the bulwarks. It used to have sheaves in it for the sheets. The sheaves should be replaced. The pad eye on the outside of the bulwark was for the sheet.

Ted- Sounds good to me.

Andy- Looking at the display sign explaining the function of the deck house. I would prefer to call this the Forward House or For'd House as the sailors used to say it. The Midship House is a term that usually refers to a raised structure in the later square riggers, such as the P Line barks. They never came up with a good name for this structure, which I think the Germans called the "high deck". The British usually called it "the bridge", but in Masfield's The Wanderer Of Liverpool (page 6) that on board her they called it "the poop", that ship only having a whaleback aft. To my knowledge it was not called the midship house, though "different ships, different fashions". I think that the small house that one finds in some four masters between the main and the mizzen, would be called the midship house, but if it was for the apprentices it was always the half-deck.

Ted- I think that the WANDERER was one of the first to have such a structure. Masfield talks about it in his book. Come to think of it the ABRAHAM RYDBERG (Connell built in 1892) got one when she was converted into a cargo carrying training ship.

Andy- Moving back to the poop accommodations, looking at the Pantry. I am sure it was re-located. But from where? The drawing of the ALCINOUS shows one here but she has a shorter poop (at 28') than the BALCLUTHA (at 36") and it has room for a mess room.

Ted- Lloyds gives the length of the poop in the Registers. I wonder how it was measured? I doubt that it would include a half round.

Andy- I think that it was just the length of the deck. [added later] I have just confirmed my impression that the poop length was actually the length of the accommodation below by measuring 11 such plans. In only one of them, the DAWPOOL, was the figure the deck above. The forecastle length is harder to interpret; in the FOUR WINDS it's the accommodation, in the ARCTIC STREAM, ALCINOUS, and DRUMELTAN it's the deck above.

Andy- At the door of the saloon, did you notice that the woodwork is different out here in the hall than in the saloon?

Ted- Yes, they used teak out there and mahogany in here. I sure do like the bird's eye maple. Aboard the PEKING they spent a lot of money to replace the saloon that we have here. Did you know that they moved some of the columns and the capitals from back in the stern, where the British school had moved them, back to the midship house?

Andy- Yes, I saw the room back there. The saloon should be in the Midship House aboard PEKING, not back aft.









